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Seasonal Variation in Retail Prices

By R. G. D. Allen

The rise in retail prices, which began late in 1950, tapered off in 1952 and the variation during 1953 would seem to be largely seasonal. During this period one commodity after another was freed from rationing or price control. At the same time seasonal variations in prices, almost entirely absent in the early post-war years, began to appear again and to become more important, absolutely and relatively, as the upward trend in prices levelled off. As early as August 1950, the index of the Ministry of Labour showed a fall because of seasonal factors. With the passage of time it has become increasingly necessary to interpret month-by-month changes in the index in the light of seasonal variation; but no attempt has yet been made to analyse the post-war seasonal pattern as it has developed. It is generally accepted that seasonal movements are large in some prices; exactly how large the movements are, and whether they reinforce or offset each other in the all-items index, has not been determined. An attempt, provisional at best, is made in this article to estimate the present seasonal pattern on the basis of experience since 1950.

An examination of movements in the components of the official index shows that a definite seasonal pattern has now emerged for prices of milk, fish, vegetables and fruit, coal and coke and (to a slight extent) for other fuel and light prices. A seasonal movement in egg prices is to be expected now that they are free of control. These are the prices examined in detail here. For food prices other than those named, the dominating factor is either the controlled price or the price set by manufacturers, and these change at non-seasonal, if not at random, points of time. Changes in prices of drink and tobacco, as for rates and prices of some services and many household items, occur at seasonal times—mainly following the Budget—but they are movements on the short-run trend of prices and not seasonal variations. For other groups such as clothing prices, where some seasonal pattern might be sought, no definite seasonal variation seems to have emerged as yet.

Except for milk and eggs, the method adopted here is to fit a short-run trend to the series of price index numbers in each sub-group from October 1950 to September 1953, to average the monthly deviations from trend and to express the resulting seasonal pattern with the January figure as zero. For coal and coke, the trend is a step-function, moving up by amounts and at particular times set by changes in controlled prices at retail, following movements in pit-head prices and freight rates. For other items, a parabolic trend is fitted by least-squares.

An estimate of the seasonal pattern in milk prices is made differently and it is more provisional than the others. It is based on experience in 1953, the first post-war year in which a clear seasonal variation has appeared :

Months	*Price (d. per pint)*	*Group Index (Jan. 1952=100)*	*Seasonal Variation*
Jan.–April	6½	108	0
May–June	6	100	–8
July	6½	108	0
Aug.–Oct.	7	116	+8
Nov.–Dec.	6½	108	0

The group index of milk prices, as shown, has the level of January 1952 milk prices as 100; this was also the level in May and June, 1953. Appropriate allowance is made in the group index for free or reduced-price milk.

Estimation is more difficult for eggs which have been free from price control only since March 26th, 1953. The price movements since March have been scarcely typical, and no more than a guess can be made at the seasonal pattern now emerging. The following assumption may be regarded as reasonable. It is taken first that the seasonal pattern will follow that of the immediate pre-war years in relative (month-to-month) movements but not in its over-all range. It remains to fix the appropriate range. Before the war this was roughly from 1¼d. per egg in April to 2½d. in November, clearly too small in absolute size (1¼d.) and too large in relative swing (100%) for present conditions. A range of about 2d. per egg is here assumed from April to November. Together with the level of April 1953, and the pre-war pattern, this leads to the following :

Month	*Group Index (Jan. 1952=100)*	*Seasonal Variation*	*Month*	*Group Index (Jan. 1952=100)*	*Seasonal Variation*
Jan. ..	127	0	July ..	114	–13
Feb. ..	116	–11	Aug. ..	121	–6
March ..	105	–22	Sept. ..	128	+ 1
April ..	100	–27	Oct. ..	138	+11
May ..	101	–26	Nov. ..	145	+18
June ..	106	–21	Dec. ..	139½	+12½

It is convenient that the average price in April 1953 was the same as in January 1952 (about 4½d. per egg) and this is the 100 level. The seasonal pattern above is very provisional and subject to revision when more is known about the free variation in egg prices.[1]

One technical point merits a passing reference. The seasonal variation is taken here as an absolute deviation up or down, i.e. a constant amount irrespective of the general level of prices. It is not taken as a percentage deviation from the trend (or trend-ratio) which would allow the seasonal pattern to grow with the general level of prices. The constant seasonal variation has the property, of which much use is made here, that the over-all seasonal pattern is obtained by addition from the seasonal movements of individual items (each multiplied by its weight in the index). It also seems to correspond more to the facts of seasonal price changes, at least in a fairly short period. It is to be expected that the seasonal movement in milk prices is (say) ½d. up and down whether the price is 6d. or 7d. a pint—and not that the price moves by (say) 7½ per cent. up and down.

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[1] After de-control in 1953 the average price moved from 100 in April to 145 in August, 120–125 in September–November, before falling in December. The August figure can perhaps be taken as an early peak; later there was a downward trend in prices.

Table I shows the resulting estimates of the seasonal pattern in each group (or sub-group) of prices, with the group (or sub-group) level in January 1952 as 100 in each case.

TABLE I

SEASONAL MOVEMENTS IN CERTAIN GROUPS AND SUB-GROUPS, INDEX OF RETAIL PRICES

(Points in index of group or sub-group, Jan. 1952=100)

	Sub-Groups				*Sub-Groups*		
	Milk and eggs	*Fish*	*Vegetables and fruit*	*Food Group**	*Coal and coke*	*Other fuel and light*	*Fuel and light Group**
Weight in Index (%)	6·2	1·9	6·2	39·9	3·0	3·6	6·6
Jan. ..	0	0	0	0	0	0	0
Feb. ..	–3·9	–1·3	+1·7	–0·41	0	–0·4	–0·21
March ..	–7·8	–4·0	+4·8	–0·66	0	–0·5	–0·27
April ..	–9·6	+1·4	+11·0	+0·29	0	+0·2	+0·11
May ..	–14·4	–8·4	+18·2	+0·19	–5·3	+0·5	–2·14
June ..	–12·6	–8·4	+19·7	+0·70	–6·0	+0·8	–2·29
July ..	–4·6	–8·0	+13·7	+1·03	–5·5	+1·3	–1·79
Aug. ..	+3·0	–6·2	–3·9	–0·44	–5·5	+1·0	–1·95
Sept. ..	+5·5	–5·7	–7·5	–0·58	–4·7	+1·0	–1·59
Oct. ..	+9·1	–5·7	–2·0	+0·83	–4·2	+1·0	–1·36
Nov. ..	+6·4	–2·3	–1·0	+0·73	–1·5	+0·7	–0·30
Dec. ..	+4·4	0	–0·7	+0·58	0	+0·4	+0·21

* Combined effect of seasonal patterns in sub-groups shown.

These are expressed in terms of the level of prices in the particular group ; for example, the October figure of +9·1 for milk and eggs means that these particular prices in October are seasonally 9·1 points above January, the level of milk and egg prices in January 1952 being 100.

The effect of the three seasonal patterns of food prices on the food group index as a whole is also shown in Table I. For any month the entries in the three columns are multiplied by the weights given at the top of the columns; the products are then added and divided by the weight of the food group (39·9 per cent.). The combined effect of the two seasonal patterns in the fuel and light group is calculated in the same way.

The contribution of each seasonal pattern to the seasonal variation of the all-items index is similarly obtained by multiplication by the weight of the group or sub-group concerned.[1] The total seasonal movement in the all-items index is then derived by addition. The individual contributions and their combined effect are set out in Table II in terms of points in the all-items index with January 1952 as 100. The results are shown graphically in the accompanying diagram.

TABLE II

SEASONAL MOVEMENTS IN ALL-ITEMS INDEX OF RETAIL PRICES

(Points in all-items index, Jan. 1952=100)

	Deviation from January due to prices of:				*Combined effect*	
	Milk and and eggs	*Fish*	*Vegetables and fruit*	*Fuel and light*	*Deviation from January*	*Change from previous month*
Jan.	0	0	0	0	0	–0·24
Feb.	–0·24	–0·03	+0·10	–0·01	–0·18	–0·18
March	–0·48	–0·08	+0·30	–0·02	–0·28	–0·10
April	–0·60	+0·03	+0·68	+0·01	+0·12	+0·40
May	–0·89	–0·16	+1·13	–0·14	–0·06	–0·18
June	–0·78	–0·16	+1·22	–0·15	+0·13	+0·19
July	–0·29	–0·15	+0·85	–0·12	+0·29	+0·16
Aug.	+0·19	–0·12	–0·24	–0·13	–0·30	–0·59
Sept.	+0·34	–0·11	–0·46	–0·11	–0·34	–0·04
Oct.	+0·56	–0·11	–0·12	–0·09	+0·24	+0·58
Nov.	+0·40	–0·04	–0·06	–0·02	+0·28	+0·04
Dec.	+0·27	0	–0·04	+0·01	+0·24	–0·04

The seasonal pattern for vegetables and fruit, and the provisional one taken for milk and eggs, are large in their swings from low to high points. The vegetables and fruit index falls by 27 points from June to September; that for milk and eggs rises by 23½ points from May to October. Each of these sub-groups of prices has a weight of over 15 per cent. in the food group index and of over 6 per cent. in the all-items index. The seasonal patterns for fish and for coal and coke are definite. Prices are high in January and there is a modest decline in the summer. The patterns are smaller in their range and they have less effect (because of lower weights) on the all-items index.

The important fact, however, is that the two main seasonal patterns so nearly offset each other; for example, milk and egg prices are low in May and June when the prices of vegetables and fruit are high. The seasonal variation in the food index as a whole is therefore not large. Even so, food prices in general fall seasonally by 1·6 points from July to September and then rise by 1·4 points in October (Table I).

Equally, the combined effect of the seasonal patterns on the all-items index is quite small. There are only two months in which there is a rise or fall of more than ½ point from the previous month. In August there is a seasonal fall of 0·6 point from July; the prices of potatoes and fruit are much reduced, fish and coal prices remain low but the

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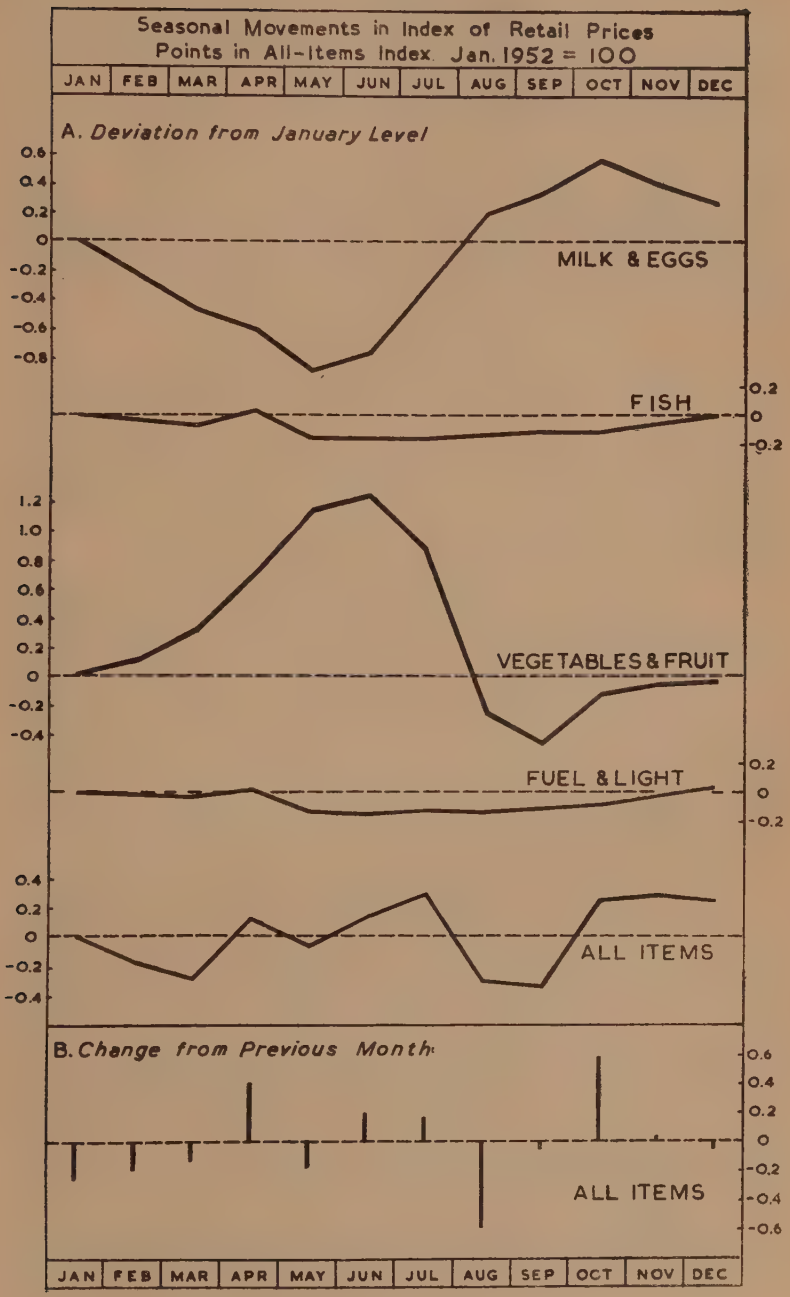
[1] The weight is appropriately expressed as a proportion of the total weight in the index, e.g. 0·062 for milk and eggs.

DIAGRAM


Seasonal Movements in Index of Retail Prices
Points in All-Items Index. Jan. 1952 = 100
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
A. Deviation from January Level
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
MILK & EGGS
FISH
0.2
0
-0.2
1.2
1.0
0.8
0.6
0.4
0.2
0
-0.2
-0.4
VEGETABLES & FRUIT
FUEL & LIGHT
0.2
0
-0.2
0.4
0.2
0
-0.2
-0.4
ALL ITEMS
B. Change from Previous Month
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
ALL ITEMS
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC

price of milk is raised. In October the seasonal rise from September is also 0·6 point; most seasonal prices are then moving upwards, particularly eggs, some vegetables and coal. There is also a seasonal rise of 0·4 point from March to April when prices of vegetables and fruit are moving towards their peak, fish prices are high and the prices of eggs are changing little near their low point.

The seasonal pattern of the all-items index has low points in March and September, and peaks in July and November. The variation between each low and high is about 0·6 point. If the index (January 1952=100) is given to one decimal place, which is perhaps more than the accuracy of the index permits, the seasonal movements are sufficiently important to make correction worth while. The results for the food and all-items index numbers in 1953 are given below :

INDEX OF RETAIL PRICES, 1953

(*Jan. 1952 = 100*)

	Jan.	*Feb.*	*Mar.*	*Apr.*	*May*	*June*	*July*	*Aug.*	*Sept.*
Food index	109·2	109·6	110·7	112·5	112·7	113·8	113·7	111·7	111·0
Corrected for season	109·2	110·0	111·3	112·2	112·5	113·1	112·7	112·1	111·6
All-items index	104·4	104·7	105·4	106·4	106·0	106·6	106·6	105·9	105·7
Corrected for season	104·4	104·9	105·7	106·3	106·1	106·5	106·3	106·2	106·0

The course of the all-items index, corrected for seasonal variation, shows a rise in the early months of 1953. In part this is due to the fact that the price of eggs was then controlled and unchanged, whereas the usual seasonal movement is a fall to a low point in April. From April to September 1953 the index showed only small movements which correspond well with the seasonal pattern. The present calculations confirm that there was practically no change in the general level of retail prices, apart from seasonal movements, during this period.

If the all-items index (January 1952=100) is rounded to the nearest whole number, giving a figure of 106 or 107 in the middle of 1953, then even the largest of the seasonal variations may not move the index by one point. There was a seasonal movement in 1953 but only with the assistance of appropriate figures in the first decimal place of the index ; there was a rise from 106 in April and May to 107 in June and July, and a fall back to 106 in August. The index is higher with June 1947 written as 100, i.e. at 140 or 141 in the middle of 1953, and the seasonal variation is somewhat greater, up to 0.8 point. It is then generally true that the index falls seasonally by one point between July and September and between November and March, with corresponding seasonal rises of one point between September and November and between March and July.

The London School of Economics.

Concerning Utility

By Charles Kennedy

I

This article was originally intended to be nothing more than a short critical comment on the interesting paper by Mr. Bernardelli which was recently published in *Economica.*[1] It soon became clear, however, that Mr. Bernardelli's paper raised a number of quite fundamental issues, which could be more appropriately discussed without reference —at any rate at the outset—to his own particular arguments. Even so, some justification is surely required for presenting to the reader yet another examination of the fundamental questions involved in what Professor Robertson has called " Utility and all that ".[2] I believe that it is possible to make a greater clarification of many of these questions than has yet been achieved. But, having made this claim, I must at once disclaim any originality in the ideas to be presented. Indeed, one of the main purposes of this article is to draw attention to the fact that some of these questions were virtually answered a good many years ago—not by an economist, but by Bertrand Russell in his *Principles of Mathematics.*[3]

It is surprising, in view of the almost uncanny relevance of this work, especially of Part III on Quantity, to the discussion amongst the economists, that so little explicit reference has been made to it. Its influence is of course to be seen in the writings of many authors, for example in those of Mr. Armstrong.[4] Professor Pigou has used a quotation from Russell to very good effect in a recent article.[5] But, while many lessons have been learnt from Russell's work, I do not think the full implications of his ideas have yet been appreciated by economists. It would seem, therefore, that a summary statement of the relevant definitions and ideas advanced by Russell might make a useful contribution to the economists' discussion. This is the task we shall attempt in the next section. We shall, however, be content with a mere statement, and shall make no attempt to present or discuss the arguments on which his analysis rests.[6] Thus, our summary will be only a very imperfect substitute for the original, but it will, I think, put us in a favourable position for embarking on a critical discussion of some of the arguments and ideas which have been put forward by the economists. This we shall undertake in later sections of the present article.

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[1] " A Rehabilitation of the Classical Theory of Marginal Utility ", August 1952.

[2] *Utility and All That*, George Allen & Unwin, 1952.

[3] First published by George Allen & Unwin in 1903.

[4] " The Determinateness of the Utility Function ", *E.J.*, September 1939.

[5] " Some Aspects of Welfare Economics ", *Amer.E.R.*, June 1951, p. 290.

[6] Page references in the text will refer to the Second Edition (1937). I ought to say that in what follows I have not hesitated to make use of Russell's own words and phrases without specific acknowledgment. To have attempted a complete paraphrase of so lucid a writer would have been merely foolish; while the repeated use of quotation marks might have been found tiresome by the reader. I am indebted to Lord Russell and to Messrs. George Allen & Unwin for allowing me to make this use of their material.

II

It will be most convenient to begin with the idea of *magnitude* (p. 159 *et seq*.). A magnitude is defined as whatever is greater or less than something else. In this definition, *greater* and *less* are indefinable. A magnitude should be distinguished from a *quantity*, which may be defined as a particular contained under a magnitude. Thus, an actual foot-rule is a quantity: its length is a magnitude. Every magnitude has a certain relation to some quality or relation, and this fact is expressed by saying that the magnitude in question is a magnitude *of* that quality or relation. For example, we may have magnitudes of sweetness or magnitudes of temperature. Whenever it is possible to say that one magnitude is greater or less than another then the two magnitudes will be *of the same kind*.

Next, it will be useful to distinguish between different classes of magnitude (p. 170 *et seq*.). Many magnitudes, like the two instanced above, are magnitudes of some particular *quality*, but it is also possible that a *relation* should be a quantity and therefore have magnitude. This is most easily seen by a consideration of statements about different shades of colour. When we say, for example, of two colour shades that one is *redder* than the other, we do not imply that we have two quantities of redness whose magnitudes we are comparing. The comparative here indicates not more of a given colour, but more likeness to a standard colour. Various shades of colour are supposed to be arranged in a series, such that the difference of quality is greater or less according as the distance in the series is greater or less. Such differences in shade are clearly relations, i.e. relations between two shades, but they also have magnitude, since there is sense in saying that the difference between any one pair of shades is greater or less than the difference between any other pair. Such differences are called by Russell *distances*, and their magnitudes *magnitudes of distance*. In the above example, the differences in question were differences between two colour shades, which themselves had no magnitude; but it should be noted that we may also have differences between two magnitudes of some one kind and that these differences are again distances in the above sense, and have magnitude. Thus, for example, the difference between two temperatures is a distance and capable of quantitative comparison with other distances of the same kind.

It will have been noticed that, in the above definitions, no mention has been made of divisibility, of the number of parts which go to make up a whole. This is because the idea of magnitude, which depends simply on the relations of greater and less, has no necessary connexion with divisibility. Nevertheless, it is of course true that we can make quantitative comparisons of wholes consisting of a number of parts. In such cases the magnitudes in question will be *magnitudes of divisibility*. Every whole consisting of parts is possessed of the property of divisibility; and the more parts it consists of, the greater is its divisibility. It is, however, important to realise that, in the case of wholes consisting of a number of parts, it is the quantities, i.e. the wholes themselves, that are divisible and not their magnitudes. All magnitudes are strictly indivisible, even when they are magnitudes of divisibility.

To sum up then: we have on the one hand magnitudes of qualities, among which one important class consists of magnitudes of the quality of divisibility, and on the other hand magnitudes of relations or, as we have called them, magnitudes of distance. We shall find that magnitudes of divisibility and magnitudes of distance are specially important when we come to consider the problem of the measurement of magnitudes. To this subject we must now turn (p. 176 *et seq.*).

Measurement of magnitudes can be understood in a wide or a narrow sense, and it is important to distinguish between the two. In its wider sense the measurement of magnitudes is any method by which a unique and reciprocal correspondence is established between all or some of the magnitudes of a kind and all or some of the numbers. In this general sense, measurement demands some one–one relation between the numbers and magnitudes in question—a relation which may be direct or indirect, important or trivial, according to circumstances. Measurement in this sense can be applied to very many classes of magnitude.

We shall be more concerned, however, with measurement in its narrower sense. What is required here is some sense in which we may say that one magnitude is double of another. Little difficulty is encountered in the case of magnitudes of divisibility. For, if one whole contains twice as many parts as another, this provides a simple sense in which we may say that the magnitude of the one is double the magnitude of the other. It is, however, important to realise that the statement " the magnitude of A is twice the magnitude of B " can never be taken literally, even when applied to quantities which are divisible. Strictly, every magnitude is indivisible, and the addition of two magnitudes of divisibility yields merely two magnitudes, not a new magnitude. But the addition of two quantities of divisibility, i.e. two wholes, does yield a new single whole. Thus, even the measurement of magnitudes of divisibility contains an element of convention: for, while the measurement is based on the process of addition, it is strictly only the quantities, not the magnitudes, that can be added.

We meet this same point when we come to try to measure magnitudes of distance, but in this case there is also another difficulty. This is because distances, being relations, cannot strictly be added. The sum of two distances is not properly one distance. Here, however, we are able to make use of an extension of the idea of addition. Suppose, for example, that there is a certain distance between two terms *a* and *b* in a series, and a distance of the same kind between *b* and *c* and between *a* and *c*. In such a case we may proceed as if we had ordinary addition and equate the distance *ac* with the sum of the two distances *ab* and *bc*. This kind of addition, which Russell calls *relational addition*,[1] provides us once again with a sense in which we can say that one magnitude of distance is double of another. For, if the two distances *ab* and *bc* are equal, i.e. have the same magnitude, then we may say that the distance *ac* is twice the distance *ab*.

Thus measurement in its narrower sense depends on the idea of addition. Divisibilities and distances (where the word " distance " is used to cover a far more general conception than that of distance in space) are the only two classes of magnitudes capable of being measured in this way. This does not mean, however, that it is impossible to assign numbers to other classes of magnitude, i.e. to measure them in the wider sense of the word. The use of a column of mercury to measure magnitudes of temperature is of course familiar to everyone. More important for our present purpose is the fact that we can use the measurement of distances between terms in a series to assign numbers to the terms themselves. There is no harm in doing so,[2] provided we realise that our success in assigning numbers to the terms in a series is not sufficient to justify us in saying, for example, that one of the terms is double another term. This point can be made clearer by the use of our earlier example of colour shades. The fact that we can measure the distances between colour shades makes it possible for us to assign numbers to the colour shades themselves. But it would be clearly wrong to infer from this that one colour shade is double of another in any meaningful sense: for colour shades are not even quantities, let alone quantities of divisibility or distance. In this example the point is, I think, obvious, but the distinction is very much harder to keep in mind when the terms to which we are assigning numbers are in fact magnitudes of some kind.

The reader will be impatient to leave these fundamentals of the theory of quantity and of its measurement, and to begin to apply the results to utility. Nevertheless it will, I think, be useful for the later discussion if we make a number of comments on the foregoing analysis at this stage. The first point which requires emphasis is the unimportance, from the theoretical point of view, of the whole question of the measurement of magnitudes. On this point one cannot do better than to quote Russell *in extenso*. The passage in question has already been quoted by Professor Pigou, but it is so important and instructive that I shall not scruple to repeat it (p. 182):

" Those mathematicians who are accustomed to an exclusive emphasis on numbers, will think that not much can be said with definiteness concerning magnitudes incapable of measurement. This, however, is by no means the case. The immediate judgments of equality, upon which (as we saw) all measurements depend, are still possible where measurement fails, as are also the immediate judgments of greater and less. Doubt only arises where the difference is small; and all that measurement does, in this respect, is to make the margin of doubt smaller—an achievement which is purely psychological, and of no philosophical importance. Quantities not susceptible of numerical measurement can thus be arranged in a scale of greater and smaller magnitudes, and this is the only strictly quantitative achievement of even numerical measurement. We can know that one magnitude is greater than another, and that a third is intermediate between them; also, since the differences between magnitudes are always magnitudes, there is always (theoretically, at least) an answer to the question whether the difference of one pair of magnitudes is greater than, less than, or the same as the difference of another pair of the same kind. And such propositions, though to the mathematician they may appear approximate, are just as precise and definite as the propositions of Arithmetic. Without numerical measurement, therefore, the quantitative relations of magnitudes have all the definiteness of which they are capable—nothing is added, from the theoretical standpoint, by the assignment of correlated numbers. The whole subject of the measurement of quantities is, in fact, one of more practical than theoretical importance ".

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[1] The above is a very inadequate account of relational addition (see Russell, p. 180), but probably good enough for the purpose in hand.

[2] We should warn the reader that at this point we have begun to stray somewhat from Russell's text, though in a direction in which I think he would be prepared to go himself.

But, if the measurement of magnitudes has at best only practical importance, it brings with it certain dangers. This is because numbers are amenable to the processes of arithmetic: they can be added and subtracted and so on. Whenever, therefore, it is found possible to assign numbers to the magnitudes of some one kind, one is apt to presume too readily that the quantities measured are themselves amenable to these same processes, a presumption which may or may not be warranted as the case may be. Thus, because two numbers can in arithmetic be added together to yield another number, one is tempted to conclude that two quantities to which numbers have been assigned can be similarly added together to yield another quantity of the same kind. The case is even worse where subtraction is concerned, because of the ambiguity which attaches to the word " difference ".

It is probably no exaggeration to say that the greater part of the confusion which has surrounded the subject of utility in the writings of economists can be laid at the door of this single word " difference ". The word can be used in three distinct senses: in the sense of mere unlikeness; in the sense of distance as we have explained it above; and in the arithmetical sense. The first sense is not for our purpose very important; but the last two senses are important—and they are habitually confused in the literature. That they are quite distinct should be clear from the following consideration. Difference, in the sense of distance, is a relation, a relation between two terms in a series. Difference, as obtained by subtraction, on the other hand, is not a relation. If, for example, I take away two apples from a collection of five apples, I am left not with a relation between five apples and two apples, but actually with three apples.[1] Russell, once again, is quite explicit about the matter (*Principles of Mathematics*, p. 172):

> " It should be observed that all the magnitudes of one kind form a series, and that their distances, therefore, if they have distances, are again magnitudes. But it must not be supposed that these can, in general, be obtained by subtraction, or are of the same kind as the magnitudes whose differences they express. Subtraction depends, as a rule, on divisibility, and is therefore in general inapplicable to indivisible quantities."

The mere fact that the same word " difference " can be used to cover these two senses itself leads to a risk of confusion between them; and it will readily be seen that the assignment of numbers to magnitudes can add considerably to this risk.

In short, the main charge which is to be laid against " an exclusive emphasis on numbers " is that the measurement of magnitudes, while an unimportant matter in itself, helps to blur distinctions which are indeed important—the distinction between quantities which can and quantities which cannot be added together to yield a new quantity of the same kind, and the distinction between divisible and indivisible quantities.

III

We are now ready to turn to economics. It should, however, be said at the outset that it is of course not our intention to build up a complete theory of consumer's choice and of economic welfare. All we intend to do is to make a voyage or two, with Russell as pilot, on the by no means uncharted seas of utility theory. While on these voyages, we shall occupy ourselves in commenting on, and even on occasion in correcting, some of the charts which have been prepared for us by earlier travellers. But, before setting out, it will be useful if we delimit the scope of our travels. Thus, we shall not venture into the more recently discovered Stochastic Ocean,[2] even though I believe our simple craft would acquit herself quite well in those uncertain waters. Also, we shall make no attempt to confine ourselves to objective quantities and to scientifically testable hypotheses: indeed, we shall in the main be interested in subjective quantities. Finally, we shall not primarily be concerned with the exact interpretation which is to be given to " utility ". In other words, we shall not attempt to decide whether utility should properly be regarded as pleasure, as happiness, as satisfaction, as intensity of desire or as liking[1]; although we shall sometimes have to refer to one or other of these meanings by way of illustration. For our purposes, it will be enough to make up our minds about certain characteristics of utility, about which there should not be much disagreement. Thus we shall hold that utility is a quantity, i.e. has magnitude; that it is indivisible; and that two utilities when added together do not yield another utility. We shall find that this last characteristic will require some further discussion later. For the moment we shall be content to rely on Bertrand Russell. " The sum of two pleasures is not a new pleasure ", he writes (p. 179), " but is merely two pleasures "; and we shall take this to apply also to any other interpretation of utility which may reasonably be advanced.

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[1] Strictly speaking, this distinction should also be maintained even where numbers only are concerned. Thus the *difference* between the two cardinal numbers 5 and 2 is properly the positive integer $+3$, which is a relation, i.e. the relation of $n+3$ to n. On the other hand, if we *subtract* the cardinal number 2 from the cardinal number 5, we do get as a result the cardinal number 3. *Cf.* Russell, *Introduction to Mathematical Philosophy*, George Allen & Unwin, 2nd Edition, p. 64.

[2] See, for example, Samuelson, " Probability, Utility and the Independence Axiom ", *Econometrica*, October 1952.

In the present section we shall discuss the utility of a single individual, while in the final section we shall investigate the more intricate problems which arise from the fact that a community is made up of a number of individuals.

The first cartographer whose work we must examine is Mr. Armstrong.[2] Mr. Armstrong is obviously very well versed in the principles of the theory of quantity which we have tried to summarize above, and in many ways his ideas come extremely close to those which we should ourselves put forward. As far as I know, he was the first to insist, as against the Lausanne school and the latter-day ordinalists, that " preference " was a quantity: and, moreover that, since preference was to be interpreted as the difference (in our above sense of distance) between two utilities, it was also amenable to the process of addition (we should say of relational addition) and thus capable of measurement in the narrower sense.[3] If Mr. Armstrong had left the matter there, we should have had no complaint to make. But, alas, he went further. The temptation to use the measurement of preferences to attach numbers also to magnitudes of utility was too strong; and once this attachment took place the numbers took charge.[4] They could be added, subtracted, worse still differentiated; and the result of this last operation was—*marginal utility.*

Now, so long as utility is thought of as an indivisible quantity, then " marginal utility " is a contradiction in terms. For the word " marginal " presupposes increments of utility, and an increment of an indivisible quantity is impossible. In the old days, when utility was still regarded as divisible, then the marriage between numbers and magnitudes of utility was perfectly properly contracted, and marginal utility a legitimate child of the marriage. But the union arranged, and very discreetly arranged, by Mr. Armstrong was a mere attachment, with marginal utility as an unhappy consequence.

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[1] This last interpretation is not, as far as I know, to be found in the literature; but, for a reason which will appear later, we think it ought to be introduced.

[2] *Op. cit.*

[3] *Ibid.*, p. 460. Like ourselves, Mr. Armstrong leaves undecided the exact interpretation of " utility ". But this reticence was in his case unnecessary. If the difference between two utilities is to be identified with " preference ", then surely " utility " must be interpreted as " liking ". " To prefer ", after all, means " to like better ".

[4] *Ibid.*, p. 460 and especially pp. 466–467.

The pity of it is that it was all quite unnecessary. If Mr. Armstrong had confined himself to quantities of preference, and had not succumbed to the temptation to measure utility, he would have run fewer risks of going off his course. He would have been in no danger of confusing preference, which by its very name clearly implies a relation between terms in a series, with an increment of utility, which equally clearly does not.[1] He could have taken his consumer theory just as far as he wished. Had he chosen to do so and thought it empirically justifiable, he could even quite properly have stated a law of diminishing preference, analogous to the law of diminishing marginal utility of the old days.

It would be charitable to suppose that some such idea as this last lay behind Mr. Bernardelli's recent attempt to legitimize marginal utility,[2] but I am afraid such a view does not stand up to examination. Put briefly, Mr. Bernardelli's suggestion is that we should cease to regard utility as a function of the quantities of consumption goods available, i.e. symbolically as

$$U(\xi, \eta, \ldots),$$

but regard it instead as the difference function

$$U(a + x, b + y, \ldots) - U(a, b, \ldots),$$

where the set of variables a, b, etc. denotes the initial position of the consumer and the set x, y, etc. stands for the quantities of commodities that are being exchanged or otherwise acquired, and where U is an auxiliary function. Since, however, utility is " unquestionably ordinal in nature ", we are asked finally to replace this difference function by an arbitrary but monotonically increasing function of itself.

Something has surely gone badly wrong here. Apparently, quantities of U—Mr. Bernardelli never explains what, if anything, the symbol U stands for—are amenable to the process of subtraction; but once this subtraction has been performed we are left with quantities which for some reason can only be compared ordinally. Mr. Bernardelli's verbal argument is scarcely less confused. Thus, he seeks to justify the law of diminishing marginal utility by appealing to the experience of childhood, and argues that we have all experienced a greater intensity of desire for the first helping of a pudding than for the second.[3] This is of course perfectly true, but it does not seem to be altogether relevant to the problems of a consumer's choice. Even if we allow the idea of divisible utility to pass for the moment, Mr. Bernardelli seems here to have made the old mistake of identifying the marginal utility of, say, cigarettes with the utility of the last cigarette smoked instead of with the *extra* utility of smoking one more cigarette a day.

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[1] This criticism of Mr. Armstrong is perhaps overstated. At times he shows himself to be well aware of the distinction between an interval and an increment; but he seems to me to be too ready to forget this distinction as soon as he has established the " determinateness " of the utility function. The main point of difference between ourselves and Mr. Armstrong is that we should make a distinction between " determinate " utility and " cardinal " utility where he makes none. We are prepared to accept that utility is " determinate ", but not that it is " cardinal ". *Cf.* also his later article, " Utility and the Theory of Welfare ", *O.E.P.*, October 1951, especially p. 259n.

[2] *Op. cit.*

[3] *Ibid.*, p. 260.

I think we had better put Mr. Bernardelli's chart away again in our locker. But, before we do so, it may perhaps be worth while to examine one further argument that he puts forward.[1] It is an argument which has always been rather troublesome to the ordinalists, though we shall be able to dispose of it quite quickly. Mr. Bernardelli argues that a consumer when confronted by three possible positions p_a, p_b and p_c may quite properly say:

" I like p_b better than p_c, but from p_c I would really *much rather* go to p_a than to p_b ",

and that this implies not merely that $U(p_a) > U(p_b) > U(p_c)$ but also that $U(p_a) - U(p_b) > U(p_b) - U(p_c) > 0$. The reader who has followed our earlier analysis should have no difficulty in seeing what is wrong with this argument. The idea of difference (in the sense of distance) has become mixed up with the idea of subtraction. Once it is realised that the consumer is making a quantitative comparison of distances, which in no way presupposes the subtraction of one utility from another, then a statement such as the above can no longer be used to support a case for marginal utility.

We might summarize our views on the cardinal-ordinal controversy in the following way. We have seen that the measurement of utility is a matter of no theoretical importance and that an undue emphasis on numbers carries with it certain dangers, since it tends to distract attention from the more important question whether utilities can or cannot be added and subtracted. As far as this latter question is concerned, we have seen that we must regard utility itself as not amenable to these processes, but that the difference between any pair of magnitudes of utility—which, for one interpretation of utility, may be identified as a " preference "—is a quantity of a kind to which a special type of addition and subtraction can be applied.

I should have no hesitation at all in proposing this solution, were it not for the fact that it has already come under the lash of Professor Robertson—in advance, so to speak. He asks in one of his more ironic passages:[2]

" Will someone perhaps announce the face-saving discovery that all along the word ' ordinal ' has carried the connotation not only of being ordered but of being ordered in an orderly manner, i.e. with a divisible space between any two ordered points ? "

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[1] *Ibid.*, p. 267.

[2] *Op. cit.*, p. 29. Professor Robertson has since pointed out to me that his ironic prediction has already been fulfilled by C. L. Coombs in " Psychological Scaling without a Unit of Measurement ", *Psych. Rev.*, May 1950. *Cf.* also Boulding's essay in the latest *Survey of Contemporary Economics*, Vol. II, Richard D. Irwin, Inc., 1952, p. 10.

If we replace the word " space " by " distance " and make it clear that by " divisible " we mean in this case " capable of relational addition and subtraction ", then this is indeed exactly what we wish to announce. I very much hope that Professor Robertson may be persuaded that there is good authority for the announcement and that his irony is in this case misplaced. Is it fair to regard our solution—as Professor Robertson does—as nothing more than a " semantic dodge " ? It is true, of course, that our solution is to a large extent a matter of words. We have seen, for instance, that Mr. Armstrong's scheme could be rendered entirely unobjectionable by little more than a change of terminology. A refinement of terminology is in any case a thing not altogether to be despised. Thus it would, I think, be a great blessing if the term " marginal utility " were finally banished from the discussion, if for no other reason than that the mere mention of it makes the ordinalists at once reach for their guns—justifiably, as we have seen. But there is more to it than this. The terminological confusion reflects also a confusion of thought, which, though it may not be of great importance so long as we remain with a single consumer, is a serious matter when we come to consider questions of economic welfare.

We ought not to leave the individual consumer without mentioning one further question. Is not Mr. Armstrong's chart, even when corrected in the manner we have suggested, possibly too elaborate for the purpose in hand ? Cannot the same results be obtained just as well with nothing more than an ordinal preference map ? I do not wish to enter into this particular discussion here; though I think the thorough-going ordinalist has a good case as far as the theory of consumer's choice is concerned.[1] In welfare economics, however, it is quite another matter.

IV

In any discussion of the foundations of welfare economics, pride of place must be given to Professor Pigou, who is the pioneer in these difficult waters. Professor Pigou is so skilled and experienced a navigator that it is only with great diffidence that we shall venture to comment on his work. Recently, he has been revisiting the scene of his earlier explorations and he has made a number of emendations to the charts he prepared earlier. With many of these emendations we are wholeheartedly in agreement. We can only commend his endorsement of Russell's doctrine of the unimportance of measurement as such.[2] We should also agree that we can and do make quantitative comparisons between the utilities of different individuals and between differences of utility.[3] But from these inter-personal comparisons of utility Professor Pigou seems to indicate an easy passage to statements about " greater or less total utility " and about " maximizing the utility of the community "[1]; whereas our own look-out has distinctly seen breakers ahead. For, so long as we maintain that utility is indivisible and that two utilities when added together do not yield another utility, it is not at all clear what we mean by " total utility " or by the " utility of the community ".

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[1] In this matter I have been influenced by some as yet unpublished work of Professor Hicks, which I have been privileged to read.

[2] Pigou, *op. cit.*, p. 290.

[3] *Ibid.*, p. 291 *et seq.*

We are not, of course, the only mariners to have felt a certain uneasiness in this particular stretch of water. Dr. Little, also, was constantly using his lead and line, as well as more elaborate sounding apparatus.[2] He seems to have made the passage in the end, since he is prepared to talk about maximizing happiness, i.e. the happiness of the community; but he is not quite sure how he has managed it, and he is prepared to leave his chart rather vague at this point. Let me quote in full:[3]

" To say that one *adds* Smith's and Jones's satisfaction is wrong, because it is applying far too precise a word to the mental process which we go through when we try, as we may do, to estimate whether making a change (without compensation) would produce more happiness. The conflict, which one may go through, between thinking that utilitarianism is nonsensical and thinking that there must be something in it, results from the endeavour to make it too precise. So long as it remains vague and imprecise, and avoids the use of mathematical operations and concepts such as ' adding ', and ' sums total ', there is something in it; but it becomes nonsensical if it is pushed too hard in the attempt to make it an exact scientific sort of doctrine. There is little doubt that we do, in fact, make rough comparisons, which, if they were precise, would imply the addition of satisfactions. It makes sense to say, for instance, that the difference between A's and B's increments of happiness is greater than C's increment; in which case we can also say that A's increment is greater than that of B and C put together."

Now, Dr. Little's resort to vagueness in order to resolve his conflict is unworthy of him, and we must try to do better ourselves. Once again, we shall have no difficulty, provided we keep in mind the important distinctions which we have already stressed. Where Dr. Little went wrong was in talking about " increments " of happiness at all.[4] The rough comparisons which we do, in fact, make are comparisons not of increments but of differences of happiness. While the relational addition of such differences is perfectly proper, we must insist that our inter-personal comparisons, however precise we make them, in no way imply the addition of happinesses or of satisfactions; there is nothing in such comparisons which should lead us to revise our doctrine that the addition of two utilities does not yield another utility. Thus, Dr. Little's conflict may quite easily be resolved without any resort to vagueness. But we have not yet found a passage through the reef which has so far been barring our way. The reason for this is quite simple: there is in fact no such passage.

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[1] *Ibid.*, p. 299 *et seq.* The above phrases are not the ones actually used by Professor Pigou, who speaks in terms of " increasing aggregate satisfaction ".

[2] *A Critique of Welfare Economics*, O.U.P., 1950. See especially pp. 54–55, but almost the whole of Chapters IV and V is also relevant.

[3] *Ibid.*, p. 55.

[4] We must also quarrel with Little's suggestion that " adding " and " sums total " are primarily *mathematical* concepts. As Russell has shown (p. 117 *et seq.*), *arithmetical addition* can itself be derived from the idea of *logical addition.*

This may be made clearer by an analysis of the notion of a " sum of utilities ". There is a sense in which anything can be summed. Thus, for example, the sum of Smith's and Jones's utilities is quite simply " Smith's utility and Jones's utility ", where the word " and " indicates summation. What is important from our point of view, however, is that we do not get the right kind of quantity as a result of this summation. What we want is a quantity of *utility*, but what we get is a quantity of *utilities*. I hope the distinction is clear. A quantity of utilities has a magnitude of divisibility which depends only on the number of individuals whose utilities we are summing—and this takes us nowhere. We must have a quantity of utility if we are to be able to speak of " greater or less total utility " and of " maximizing total utility ".

The issue is further complicated by the fact that, in certain circumstances, we can treat our sum *as though it were* a quantity of utility, by making use of an extension of the ideas of greater and less. Thus, for example, if a certain change gave Smith greater utility and Jones no less, we could say that the change had led to " greater " total utility. This extension, however, only enables us to deal with trivialities, and, in view of the confusion to which it may give rise, it is probably better to ignore it altogether.[1]

In short, since the summation of the utilities of different individuals does not furnish us with a quantity of utility, it follows that we are not permitted to speak about " greater or less total utility " or about " maximizing the utility of the community ". This means also that the school of thought which, following Professor Robbins, refused to make inter-personal comparisons had some justice on their side. We should agree with Dr. Little that they were quite wrong in " denying " inter-personal utility comparisons or in suggesting that these necessarily involved value judgments.[2] On the other hand, we think they were quite right in " denying " total utility or at least in suggesting that the transition from the utility of individuals to the utility of the community required value judgments—in which case the whole meaning of " utility " was changed in the process, and the word had better be replaced by another.

Before we hazard our own suggestions for welfare economics, we must take a quick look at just one more chart, the Bergson-Samuelson welfare function.[1] This particular chart, unlike some of the others we have considered, is not, I think, open to correction. It is, however, open to criticism, and this criticism has already been nicely expressed by Professor Robertson.[2] Briefly, although the chart is very useful for some purposes, it has not enough detail: we are asked to put our trust in the Deity at too early a stage in the voyage.

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[1] The present writer was probably unwise to make use of a " total utility function " in a recent article in the *Review of Economic Studies*, Vol. XX (2), 1952–53; but he does not think that his having used this concept in any way detracts from the validity of the main argument there put forward.

[2] *Op. cit.*, p. 56 *et seq.*

The differences between the various schools of thought in welfare economics are very clearly revealed as soon as we have determined the exact point at which, in each case, value judgments and assumptions are introduced into the argument. Thus, the " scientific " school is not prepared to introduce them at any point; and those of its number who nevertheless started to talk about welfare were severely taken to task by Dr. Little.[3] Professor Samuelson uses value assumptions to help him to move straight from the utility of the individual to the welfare of society. The utilitarians, Professor Pigou and, in one of his guises, Dr. Little[4], want to make use of inter-personal utility comparisons to take them from the utility of the individual to the utility of the community and only then introduce value assumptions to bring them finally to economic welfare. Professor Robertson wishes to rejoin the utilitarians in their Cardinal Club, where it is the custom that value assumptions should only be brought in with the liqueurs. We shall not follow him into those august precincts; but we sympathise with his wish that the introduction of value assumptions should be put off until the last moment possible, that we should " carry our reasoning on a purely economic basis a good deal further than we are now allowed to do, before finding it necessary to call in priest or prophet to help us ".[5] The reader who has followed us so far should be in no doubt as to when this last possible moment occurs: it is *after* we have made our inter-personal utility comparisons but *before* we start talking about maximizing the total utility of the community.

Let us make a value assumption; that any change which makes more *difference* to the utilities of the gainers than to the utilities of the losers also makes for greater economic welfare.[6] With this, we can do all that the utilitarians ever were able to do. We can, if we like, arm ourselves with a law of diminishing differences of utility and thereby justify

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[1] See, for example, Samuelson, *Foundations of Economic Analysis*, Harvard, 1948, Chapter VIII.

[2] *Op. cit.*, p. 37 *et seq.*

[3] *Op. cit.*, Chapter VI.

[4] The Little of pages 54 and 55. Later on (Chapter V), he becomes very much more doubtful about " the utility of the community ", and his final suggestions for welfare economics, i.e. his *basic criterion* (Appendix), make no use of the concept at all. As far as our present classification goes, we should, I think, have to class the Little of the basic criterion with Professor Samuelson.

[5] *Op. cit.*, p. 39.

[6] For a suggestion in many ways similar to our own see Armstrong, " Utility and the Theory of Welfare ". The objection we made to his earlier article, however, applies also to this one: he seems to hold that the establishment of a " determinate " utility function enables him to treat utilities as " cardinal " quantities, i.e. capable of addition and subtraction. (See, for example, p. 270.)

—after making the necessary reservations—the "*prima facie* case for holding that, given time to ease painful transitions, something not far short of complete equality of distribution would generate the maximum of immediate ecfare that could be distilled from an unchanged volume of productive resources ".[1] Yet we have not had to add utilities as such, nor to make any mention of " the total utility of the community ". We shall have offended nobody.

We have now returned from our voyages; returned, moreover, without a " semantic snarl " on any of our faces. I hope the chart that we ourselves have prepared will be found correct and useful by future voyagers. But possibly more useful to them than anything we have set down will be a single piece of advice—that they should take Bertrand Russell on board with them. As a pilot he is thoroughly to be recommended.

The Queen's College, Oxford

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[1] Robertson, *loc. cit.*; *cf.* also Little, *op. cit.*, p. 62 *et seq.*

Credit Rationing and the Relevant Rate of Interest

By J. S. G. Wilson

In an earlier article,[1] an attempt was made to establish the process by means of which Keynes' equation between the rate of interest and the marginal efficiency of capital (or expected rate of profit) would be brought about. It was established that the conditions under which such an equality could be exactly achieved were somewhat restrictive and various simplifying assumptions had to be employed—rational behaviour by businessmen, perfect foresight, a constant demand for money to hold, interest-elastic investment, perfect shiftability of funds, a single rate of interest, and perfect mobility of resources other than money. Even under these conditions, the *level* at which this equation would be achieved would certainly vary from time to time. When, however, this framework of simplifying assumptions was removed, there was good reason to believe that " on many occasions the influence of the interest factor is definitely swamped by other more obvious considerations ". If we allow that the businessman does pay heed, even though only to a limited extent, to the costs of raising finance, it is necessary to emphasise, first, that no two entrepreneurs will have access to financial resources on exactly the same terms and, second, even the same entrepreneur will generally find that these costs will be conditioned by the *purpose* for which he borrows. (In simple terms, rates will usually be different for short-, medium- and long-term borrowings.) Furthermore, not only is there a whole range of interest rates, but also a variety of conditions which may be attached to a loan. Each transaction, therefore, has its unique characteristics. As a result, for each borrowing operation there is one particular rate of interest, which is the Relevant Rate of Interest, and, to the extent that the entrepreneur acts rationally, he will attempt to secure an equation at the margin between this rate and his expected rate of profit.

When developing this analysis, no specific mention was made of credit rationing. My attention was drawn to this lacuna in the analysis by my colleague Professor F. W. Paish. I was disposed to believe at the time that the introduction of this complication would require no material modification of the argument. Upon reflection, however, there would seem to be certain peculiarities which do call for further investigation.

Sufficient was said in the earlier article about the Relevant Rate of Interest for us to be tolerably clear about its definition. Can we be equally sure as to the meaning to be attached to the term Credit Rationing? In a general way we may feel confident that we do know what it means. Under certain circumstances we find that banks and other credit institutions are only prepared to allow their customers a limited amount of accommodation at current rates of interest. For some reason, it has been decided, either by the monetary authorities or, it may be, by the banks themselves, that the demand for credit cannot be fully met at current rates and the authorities (or the banks) are unwilling that interest rates should rise. Partially, at least, the price mechanism is abandoned, but somehow or other a proportion of the demand for credit must be choked off. Sometimes the quantitative limits to be achieved are fairly precisely determined; on other occasions the overall limits may be more "flexible". As indicated above, the imposition of credit rationing may have been on the initiative of the monetary authorities, or of the banks themselves. In either case, rationing may be more or less firmly imposed. Thus, the authorities (as has the Bank of England on occasion) may decide to "ration" somewhat arbitrarily the quantity of bills they are prepared to discount and thus bring pressure to bear directly or indirectly upon the banks. "Eligibility rules" for discounts may be operated in much the same way. Or a similar method may be adopted whereby stated discount ceilings are imposed upon the banks individually (as by the Bank of France, post–1945), ceilings which can only be exceeded under penalty. Or the authorities may decide to employ a "qualitative" control of credit (necessarily with quantitative implications—if not overall, at least sectionally), requesting that certain loans be not made at all, or that they should be kept to a "minimum" (as in many countries over recent years). Though varying in the degree of their intensity, all these forms of official pressure will require that the banks in their turn should bring pressure to bear on their customers to reduce, or not to increase, their borrowings. A good example of credit rationing employed on the initiative of the banks themselves was to be found in the pre-war behaviour of the Australian trading banks,[1] which (when liquidity considerations required it) preferred to employ direct limitation of advances to customers rather than to raise their general interest rate structure. (The "voluntary credit restraints" employed recently in the United States and Canada, and since abandoned as no longer necessary, do not, I think, fall in this category, since in both cases they were officially inspired.) It may well be argued, of course, that the every-day practice of commercial banks inevitably implies some degree of rationing. Thus, though this is more obvious at some times than at others, if and when their desired levels of liquidity are endangered, i.e., when the banks are "lent up", some means of cutting down the demand must be found and, given a degree of inertia in most interest rate structures, there is little alternative to "rationing".[1] On other occasions it may be that a bank feels itself over-lent in a certain direction only (it has too many eggs in one basket) and new lending to that sector is cut, or "rationed" and old loans allowed to work themselves off. Indeed, at all times when loan decisions are being made, there is an element of credit "rationing" by the simple application of ordinary banking criteria. Not every man can go to his bank and seek a loan with confidence.

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[1] " Investment in a Monetary Economy ", *Economica*, November 1949.

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[1] Since 1941 and despite recent relaxations, responsibility for such credit rationing as has been imposed by the trading banker should more properly be ascribed to the authorities themselves.

From our point of view, however, it would be wrong to concentrate merely on the overall level of bank loans. Credit rationing, whether officially inspired or not, should obviously result in either a fall in total lending, or the avoidance of an increase. What matters in our present context is the way in which the *individual* bank borrower is affected. When money is tight, the good credit risk (provided he does not wish to borrow for a purpose forbidden under an official directive) will normally be able to secure his "essential" requirements (though notions of what is "essential" are somewhat elastic). Moreover, he need not always be the best credit risk, on an objective evaluation of his proposal. The "good customer" (frequently a big customer) has a stronger pull (if only because the bank fears to jeopardise future business) than the man less highly regarded (on the basis of the profitability of his account). This probably happens everywhere, though there will be variations of degree. Where it occurs, the consequence will be relative credit starvation of some potential borrowers.[2] The probability that this will be so is increased under English conditions, in consequence of ordinary banking practice. When a proposal is submitted to an English banker, for example, one of the questions he will ask himself is whether *sufficient* finance has been sought. Borrowers do sometimes ask for less than they will need, though, of course, the opposite is also true and frequently proposals have to be pared down and more modest estimates accepted. It is not in the interests of the bank that excess accommodation should be provided, but it is equally unsatisfactory that a venture should be inadequately financed. If it is a good proposition (and acceptable on other grounds), the bank will wish to see it through. It is not in the interests of the customer, nor of the bank, that the former should be stranded halfway. Further, the banker will want to establish the size of his eventual commitment here and now. He dislikes supplementary loan applications from customers, due to an initial estimate of needs which turns out to be too modest. (Separate ventures are in a different category). As a general rule, a banker is likely to lend " all or nothing ". No doubt there are the occasional exceptions, since sometimes even bankers are guilty of an error of judgment, but " all or nothing " seems to be the principle followed. Except when it is a question of an excessive estimate of requirements, an English banker is unlikely to offer a proportion only of the funds sought. In countries where it is usual for a customer to borrow from several bankers (e.g. in France), generally on the basis of discountable paper of various kinds, it is possible and common for the customer to secure a proportion of his accommodation from one banker and to seek the rest elsewhere in the banking system.[1] However, where the bulk of the money lent is made available by way of overdraft, the " all or nothing " principle is probably difficult to supplant.

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[1] It is conceivable that a bank might lend additional amounts at increasing rates, e.g. the first £5,000 at 5 per cent. p.a., the next £3,000 at 7 per cent., and a further £2,000 at 10 per cent.—but as a matter of practice, an English banker never would. Once he has decided on the amount of finance necessary to cover a proposition acceptable to him, he will lend the whole amount at a flat rate. The rate selected will obviously depend, in part, on general monetary conditions, but it will also be influenced by the particular characteristics of the transaction in question.

[2] Cf. the views expressed in "Finance and Business", *The Manchester Guardian*, July 11th, 1953. In reporting on the tendency of bankruptcies (which apply to private persons) to rise at a time when compulsory liquidations (limited companies) were falling (first two quarters of 1953), the *Guardian* records "a widespread view that the banks have tended to help some of the large companies over a difficult period, whereas many one-man businesses, particularly in the building and timber trades, have had to fend for themselves. It is common knowledge (borne out by an analysis of bank advances) that bank loans to personal and professional borrowers have been squeezed much more than those to large industrial concerns over the past eighteen months."

Our concern is not with the man whose needs are satisfied. It is with him who cannot secure from his banker the full accommodation he requires. There are two possibilities: either

(1) He has to make do with what he has (own resources, plus current overdraft limit, if any); or

(2) He is forced to seek alternative accommodation outside the banking system.

The first of these cases reveals certain peculiarities which my earlier analysis failed to accommodate. The operations of a businessman in this category are subject to a ceiling on his funds. How are we to assume he behaves? Since he has already sought extra accommodation and been refused, he presumably desires to undertake additional activities of a profitable nature. He may adjust to the situation simply by abandoning these schemes, hoping for more favourable borrowing conditions later, by which time the opportunities he had in mind may have gone for ever. If he is more venturesome, he will presumably attempt to make a more profitable use of available financial resources than heretofore. The difficulty about this supposition is that, if he is assumed to have behaved rationally, he should already have availed himself of the most profitable activities open to him. Even if this were so, he may now be tempted to undertake somewhat more risky enterprises, failing or preferring not to evaluate these risks as highly as one might think he should. In any case, the evaluation of risk is a somewhat arbitrary calculation. It may well be the case, however, even in times of only moderately good trade, that increasingly profitable opportunities will become available. His problem will then be how to command the liquid resources necessary to take advantage of them. If he is a merchant or trader, he may be able to achieve the desired state of increased liquidity by running down stocks, though possibly at some sacrifice of price. In the latter event, such losses can only be worth while if he can expect fairly confidently rather larger profits on future transactions. In effect, the losses involved must be added to the costs of finance to which he is already subject, the percentage addition being calculated on the basis of the period for which he is out of pocket, i.e., until his new, more profitable, ventures mature. The Relevant Rate of Interest in this case is the rate he is already paying for bank finance, or an " internal " rate related to these outside rates (where he uses own resources), plus a percentage addition on account of the losses associated with the achievement of liquidity and the greater freedom of manœuvre which it implies. Again, a manufacturer might elect to run down stocks in the store-room, or to increase turnover without expanding the stock base. By so doing he risks loss of future output and business, in consequence of the possible development of bottlenecks. In these circumstances, his expected rate of profit should now exceed his direct costs of finance (whether external or internal) at least to the extent of a premium adequate to cover the risk of hold-up. If the entrepreneur is not in a position to achieve liquidity by running down stocks, he will have to depend on sales from current production to put him in funds, when he will presumably seek to employ finance so released more profitably than in the past.

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[1] Nowadays, the possible abuses of this system are overcome, in effect, by the exchange of credit information between the several banks under the auspices of the Bank of France.

Machlup apparently believes that—under conditions of credit rationing—all one need do to render the theory consistent with the normal process whereby an equation is achieved between a rate of interest and the expected rate of profit is to charge " internal " rates of interest equivalent to the appropriate expected rates of profit,[1] and this was the view followed by implication in my former article. It should be added, however, that the complications of credit rationing were not at that time in my mind, and that I was more concerned with the interest costs which should be imputed to internal resources, where these were assumed either to be adequate to finance the whole operation, or be a portion only of larger resources, partly borrowed, but adequate in total. May I now say that I believe Machlup's use of this concept of an " internal rate of interest " to be artificial and misleading, when applied to a firm subject to a financial ceiling as a result of credit rationing. Under conditions such that an entrepreneur could pursue further profitable ventures, if only he could secure additional funds, there need be no equation (except coincidentally) between an " internal " rate of interest and the expected rate of profit, where the level of the internal interest rate would be determined by the highest outside rate the entrepreneur could expect to earn on his funds, if he chose not to invest them in his own business, due allowance being made for different degrees of risk. The assumption is that his expected rate of profit on his new venture is higher than the highest outside rate open to him (allowing for risk). If he had access to more finance, he would expand his investment to that point where the expected rate of profit was no higher at the margin than the cost of the funds employed. But the truth is that he just cannot secure this extra finance; he can *never* push forward to that point of equality at the margin and it is quite an artificial solution arbitrarily to lift " internal " rates of interest to equality with the expected rate of return. All we can say is that the entrepreneur, in this case, chooses the highest rate of return open to him and we must leave it at that.

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[1] See F. Machlup, " Period Analysis and the Multiplier ", *Quarterly Journal of Economics*, November 1939 : " Of importance also, in a world of credit rationing, is the fact that the ' internal rates of interest ' of individual business firms may be higher than the rates at which they actually borrow. If, because of narrow lines of credit, firms cannot borrow as much as they would like to, the marginal efficiencies of the funds which are available to them constitute their internal interest rates." (Quoted from reprint in *Readings in Business Cycle Theory*, Philadelphia, 1944, p. 231).

The second possibility is for the entrepreneur subject to a credit ceiling at his bank to seek alternative sources of finance outside the banking system. In the United Kingdom, it is fairly safe to assume that such a borrower would be *forced* to look outside the banking system, since an application to another bank would usually be met with the asking of awkward questions and a firm refusal to take over an overdraft from the customer's present bankers. I have dealt with this only as the second case, because of doubts raised by certain of my banking friends as to whether these alternatives really exist at times when credit restrictions are being strictly enforced. Presumably, the argument is that many of these " alternative " sources themselves depend on the availability of funds from the banking system (e.g. hire purchase finance), or that persons with funds available will, under conditions of credit restriction, prefer to wait and see. Personally, I believe that such alternative sources do exist and there is some evidence to suggest that, during the recent experience of credit restriction in the United Kingdom (i.e., post-November 1951), there was certainly a demand for such finance and—though it is less easy to establish this—that some effort was made to meet it. Nevertheless, we must be wary in our interpretation of the evidence and it is important to stress at the outset that the borrowing with which we are presently concerned is very much at the " fringe " and, in all probability, is not very large in total.

Let us consider first the contribution which hire purchase finance companies might have been expected to make in satisfaction of " fringe " borrowing. So far as the large public finance companies were concerned, it is unlikely that they constituted a true alternative source. It is their practice themselves to borrow funds from the banks (and from the public by way of deposit) for purposes of their business in a ratio which probably approximates to *four* times their own capital and free reserves, but which in the case of large public companies of standing may be somewhat higher. Moreover, under conditions of credit restriction such as we are discussing, additional borrowing from the banks would be severely limited (as indeed it was under official directives). Nor would it be possible for the public finance companies to raise additional funds by seeking deposits from the public, since their bankers would certainly insist in such circumstances upon a reduction in their bank borrowings, such that the appropriate ratio between total outside funds and capital and reserves was maintained. On the assumption that the large public finance companies were already at their limit when the restrictions were imposed, no alternative finance could be derived from this source. Supplementary finance to cover strictly " hire-purchaseable " transactions (e.g. to facilitate the purchase of machinery) would continue within the ceiling, but satisfaction of the " fringe " borrower would be impossible. In point of fact, the large finance companies were placed in a position where they were forced to turn away a large amount of otherwise attractive business, simply because additional funds were not available to them.[1] Rates of interest charged reflect the supplementary character of the business done. For first-class borrowers of appropriate size, an inclusive charge of 4½ to 5 per cent. per annum would not have been untypical and, for smaller industrial business, 6 to 6½ per cent. was probably fairly representative. In so far as rates of interest on bank and other money rose in sympathy with the general trend, it is true that it became necessary to increase charges on new business, but the rates charged compared with those for bank loans of a similar character. There was, however, a certain amount of evidence to suggest that perhaps some of the smaller finance companies were attempting to cater more specifically for classes of borrowers which now found themselves subject to strict ceilings on bank overdrafts. Thus, advertisements appeared in leading financial newspapers,[2] in which hire purchase firms offered tempting rates of return on funds made available to them. These moneys (in one case, £200,000 to £300,000 per annum) were sometimes sought by way of bill discounts at rates ranging in one instance from 10.56 to 12·48 per cent. per annum. One would expect such firms to provide accommodation to their customers at appropriately higher rates. It is difficult to establish the facts, but there is some reason to believe that this was not always the case, and certain of these advertisements may have reflected the financial weakness of the finance companies concerned, high-lighted by the general credit squeeze. In other words, it may not always have been a case of seeking additional funds in order to acquire new business, but merely evidence of a desperate effort on the part of a particular finance company to keep afloat. It is still conceivable that to a certain extent there was an attempt to meet the needs of the "fringe" borrower, but it could only have been on a small scale, and the weight of the evidence in this field seems to have been against it.

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[1] To a certain extent this pressure seems to have been met by spreading the finance available more thinly. Thus, " . . . we are today serving more traders than hitherto, although in general we obtain less business from each ". Chairman's speech to Annual General Meeting of Mercantile Credit Company Limited, January 8th, 1953.

[2] e.g., *The Economist*, March, April, and May, 1952.

In those sectors of the economy subject to trade discounts, however, it may have been possible to secure temporary accommodation which did represent a true alternative to bank loans now no longer available to the parties concerned. The usual technique would be for a trader to delay his own payments for goods received at the sacrifice of a cash discount and perhaps of business reputation.[1] Alternatively, it is conceivable that by offering cash discounts on sales, the receipt of moneys due might be accelerated. In both cases one would expect the costs to be high. If normal trade terms were six weeks and cash discount 1½ per cent., accommodation on this basis would be at a rate of 13 per cent. per annum. However, the onus of securing the primary accommodation would have been passed on to others presumably better placed for the purpose—i.e., to parties still in a position to secure their requirements from their bankers.

What other alternatives exist? Following R. F. Henderson in a recent work,[2] we can list the following additional possibilities: private placings in London and provincial towns of shares and debentures not brought on to a stock exchange; participations in the formation or expansion of firms; medium- and long-term loans to firms arranged privately through accountants or solicitors; and loans on mortgage by insurance companies. It is difficult to assemble any adequate statistical information as to the importance of these several possible sources, though a certain amount of evidence may be gleaned, for example, from the advertisements of "Business Offers" in *The Times* and from items appearing in Registers K. and L. in *The Law Society's Gazette*. The period relevant to this enquiry included the months following November 1951 and, for practical purposes, one can confine one's attention to the year 1952[3], since latterly there seems to have been some degree of relaxation.

One might be inclined to dismiss "private placements" and "participations in firms" as appropriate alternatives to bank loans. Yet one does come across advertisements inviting short- or medium-term investments of sums from £5,000 to £10,000, for example for the purpose of expansion and development of a new process, with a directorship thrown in " if required ". Some of the rates offered in this category (e.g., in May 1952) are moderate (4 to 5 per cent.), but directors' fees may legitimately be regarded as a very thinly disguised supplementary interest payment.[1] Alternatively, one could quote an advertisement seeking £5,000 for 3 years at 10 per cent. against company debentures (July 1952), or the offer of " substantial interest " for a loan of up to £10,000, again against debentures (August 1952). Incidentally, over this period, 10 per cent. was the highest rate noted as being specifically offered[2] and it was mentioned in a number of cases, which may or may not have fallen within the present category (e.g., a loan sought for the purchase of new machinery and another of £30,000 to finance the purchase of a business by a director). Whether it was the Relevant Rate for such borrowings is an open question. It is perhaps significant that an advertisement inviting a loan of £2,000 to £5,000 at 9 per cent., which appeared in June, reappeared in July 1952,[3] and this suggests that money may not have been easy to raise at that rate. But this is admittedly somewhat flimsy evidence.

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[1] Even where cash discounts do not apply, temporary relief may likewise be secured by postponing payment of accounts. In this case, loss of reputation is a more obvious risk and a relevant "cost", though one exceedingly difficult to measure.

[2] *The New Issue Market and the Finance of Industry* (Cambridge, 1951), p. 46.

[3] It is significant that a check-back to *The Times*' advertisements of 1950, i.e., when credit was plentiful, revealed very few examples of the type of advertisement discussed here. Rates of interest offered were also lower.

It is sometimes asserted that it is possible to borrow money for business purposes privately through the agency of accountants and solicitors, though at rates of interest somewhat higher than are current for bank loans. It seems that nowadays this type of work is done more by accountants than solicitors, especially in provincial towns. As Mr. Henderson says, there " are simply no data as to the amounts of private loans ",[4] but there is a certain amount of indirect evidence (e.g. the advertisements already referred to) that some business finance is still raised in this way. Thus, £3,600 was required at 8 per cent. in July 1952 against a first charge on income (not a very attractive security, it must be admitted), the contract to be completed through solicitors.[5] Again, £12,500 was sought during the period under consideration at 5½ per cent. against a first mortgage secured on a factory and storage accommodation and £10,000 at 7 per cent. on the security of a fixed charge on a factory and a floating charge on all other assets, both presumably through the agency of solicitors.[6] Yet it is clear, both from private enquiry and from the advertisements, that the bulk of the investment effected through the agency of solicitors and of many accountants also is of a trustee character at rates of from 4 to 5½ per cent., which are not higher and are in some cases lower than similar bank accommodation.[1] In many of these cases the solicitor or accountant does little more than " marry " the transactions of his regular clients—trustees with funds to invest and clients who desire to borrow against the offer of a first mortgage. It is said that second mortgages are not common and, in any case, would not qualify as an investment outlet for trustee funds. Nevertheless, money was certainly sought (by means of advertisements) during 1952 against second mortgages at rates varying from 5¾ to 10 per cent., with the emphasis on the upper limit.

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[1] Another means of offering an additional inducement may be " a share in profits " as well as the interest payment, which means that in this case the lender shoulders some of the risk.

[2] Apart from advertisements in the " Personal " column of *The Times*, which were rejected as unlikely to constitute reliable evidence.

[3] There were other cases of recurring advertisements, perhaps from hire purchase or loan companies.

[4] *Op. cit.*, p. 47.

[5] *The Times*, July 8th, 1952.

[6] *The Law Society's Gazette*, April and May, 1952, respectively.

Insurance company loans against the security of a mortgage, loans on debentures and, even to a limited extent, equity interests are all made (or held), though it is impossible to determine from insurance company accounts what proportion of their funds is employed in the financing of industrial and commercial firms.[2] From the nature of their business, however, it is almost certain that insurance company loans to business would only be against first-class security and it is therefore unlikely that their rates on loans would diverge very much, if at all, from those charged on similar bank accommodation.[3]

It is possible, too, that building society loans might not unreasonably be considered here as a possible alternative source, at least under the conditions which obtained in 1952. Thus, over the relevant period, nearly all societies reported that applications for new advances increased, and this despite a definite dampening of their willingness to lend. " In part, this was probably due to the difficulty of borrowing from the banks; although the two forms of borrowing are not usually for the same purposes, last year's general squeeze must have reminded many householders that they can often add to their existing mortgages in order to finance improvements to their property. And funds that are borrowed for any one purpose tend to make up for funds that are denied for another ".[4] However, the rate charged on such loans was only 4½ per cent. (previously 4 per cent.), or materially lower than rates on comparable bank loans. Nevertheless, this source cannot frankly be regarded as offering a borrowing alternative of any major importance for purposes of business finance.

Suffice it to say that money may be raised for business purposes from several institutional sources against the mortgage of property. These are fixed (though in some cases possibly " reducing ") loans (i.e., non-fluctuating in contrast to a bank overdraft) and, in the event of a bank customer being forced to employ such a form of finance for business purposes, it would probably pay him to reduce or wipe off any overdraft accommodation upon which he was previously dependent. It is assumed here that the fixed loan was the only means open to the borrower to secure accommodation greater than the bank would allow by way of limit, and that he would reduce his overdraft with a proportion of the new money in order to avoid the payment of double interest. In addition, the borrower may in any case have to employ as security assets previously pledged to the bank. A second mortgage may be possible (with the bank holding the first charge) but it is not a very satisfactory solution and is frequently somewhat expensive. Further, a disadvantage from the borrower's point of view of switching to fixed loans may be the loss of his limit at the bank, which accommodation may be difficult to regain at a later date. Thus, under the conditions of credit stringency prevailing, for example, in 1952, it does seem that there were limited alternative sources of finance available to unsatisfied bank borrowers. In many cases, the rates of interest charged would be higher than those on bank loans and, where they were lower (e.g. building society loans), the finance raised in this way was not likely to be of more than marginal assistance.

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[1] One should perhaps emphasise how limited the trustee investment list actually is. For a general discussion of some of the problems involved, see F. W. Smith—" The Trustee Investment List ", *The Financial Times*, May 14th, 1953, May 15th, 1953, and May 16th, 1953.

[2] One recent estimate suggests that " the insurance companies invest a fairly substantial proportion of their funds—on the average probably about 15 per cent. —direct in industry and in equities. They are big buyers of industrial prior charges ". *Investors' Chronicle*, March 28th, 1953, p. 771.

[3] One source of finance that may be mentioned in this context relates to the liquidation of funds tied up in freeholds. It is understood that during the period of financial restriction there was a steady sale of freeholds to insurance companies and others, with the former freeholders remaining as tenants on long leases, a process which in certain cases may have produced significant additions to working capital.

[4] *The Economist*, March 14th, 1953, p. 748.

On the whole, therefore, it would be safe to assume that Relevant Rates of Interest for these types of business borrowing would be higher than for bank finance. But in all this second group of cases, there could and, on the assumption of rationality, there would be an equation at the margin between the Relevant Rate of Interest and the expected rate of profit, though generally at levels rather higher than for more favoured sectors of the economy.

The London School of Economics.

Combinations of Capital and of Labour in the English Paper Industry, 1789—1825[1]

By D. C. Coleman

I

The practical establishment of a paper-making industry in England dates from the seventeenth century.[2] Earlier ventures there certainly were and of those the most famous and possibly the most important was Spilman's mill at Dartford, at work in 1588.[3] During the course of the seventeenth century the number of mills increased, and on more than one occasion paper-making came to the notice of officialdom.[4] In spite of the growth implied by this, Restoration England was still very largely dependent for its paper upon imports, especially from France. In the half-century between 1670 and 1720, however, wars, trade embargoes, and immigrations of Huguenot artisans combined to provide, directly and indirectly, a major stimulus to English paper-making.[5] Without going into the details of this growth, which took place during one of the most interesting periods of early English industrial enterprise, it can be stated simply that a recognisable and significant paper industry had emerged by the beginning of the eighteenth century. From then on it grew, to undergo in due time the familiar metamorphosis of industrial revolution, finally to assume its modern shape in the later decades of the nineteenth century. In this long vista of industrial change there are two unmistakable landmarks. They both denote technical innovation which had revolutionary consequences alike to the economics and to the techniques of the industry. The first was the introduction of the paper-making machine which came into use in England in the first decade of the nineteenth century; the second marks the successful use of esparto grass and wood-pulp as substitutes for rags, innovations belonging to the 1860s and 1870s.[1] There are other landmarks too, though not so spectacular in their immediate significance. The introduction into England during the early eighteenth century of the " Hollander ", an improved device used in the preparation of the rags,[2] was followed in the 1780s by the use of steam instead of falling water as a motive power for driving this rag-beating machinery.[3] The spread of these innovations through the industry was slow, steam engines being the exception rather than the rule by the beginning of the nineteenth century[4]; change was possibly impeded by the fact that water is itself a raw material of paper-making and thus, for more reasons than one, paper mills were normally sited on rivers. The industry was quick to use the advances of chemistry in the later eighteenth century and the newly discovered chlorine came into use in the 1790s for the bleaching of rags.[5]

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[1] Economic historians have paid little attention to this industry in England and it has been thought advisable to include a very brief sketch of the industry's early development, so as to provide a background to the main concern of this article. A. Dykes Spicer: *The Paper Trade*, London, 1907, is the only work which deals, to any appreciable extent, with the economic aspects of the history of English paper-making, and it confines its attention to the nineteenth century. There are numerous books and articles on paper-making in general and on its technical history, many of them originating from America, Germany, France and Sweden. See, e.g.: Dard Hunter: *Paper-making*, London, 1947, and the bibliography therein; also E. J. Labarre: *Dictionary and Encyclopædia of Paper-making*, 2nd ed., Oxford, 1952.

[2] Rhys Jenkins: "Paper-Making in England, 1495–1788", in *The Collected Papers of Rhys Jenkins*, Cambridge, 1936. (The article is there reprinted from *The Libraries Association Record*, September 1900 — April 1902.)

[3] Spilman's mill is mentioned in various works. See, e.g.: Rhys Jenkins: *op. cit.*, p. 162; Hunter: *op. cit.*, p. 119; W. R. Scott: *The Constitution and Finance of English, Scottish and Irish Joint Stock Companies to 1720*, 3 vols., Cambridge, 1912, Vol. I, pp. 116–117. Earlier enterprises are also considered by Rhys Jenkins: *op. cit.*, pp. 155–162.

[4] See, e.g., *Calendar of State Papers, Domestic, 1636–1637*, pp. 126, 373.

[5] This period saw considerable economic and technological activity. For its impact on the English paper industry see: Scott: *op. cit.*, Vol. I, p. 314, Vol. III, pp. 63–72; Rhys Jenkins: *op. cit.*, pp. 177–178. There were eleven English patents relative to paper-making taken out in the thirty years from 1665 to 1695 and only one other, in 1747, between that period and 1772, from which time a growing number appear; 19 from 1772 to 1802 and 56 in the following thirty years. ("Abridgements of the Specifications relating to the Manufacture of Paper, Pasteboard and Papier Maché, Pt. I, 1665–1857", in the Patent Office Library.)
On the Huguenots, see G. H. Overend: "Notes upon the earlier history of the manufacture of paper in England," in *Proceedings of the Huguenot Society of London*, Vol. VIII, 1905–8.

As the economic development of an industry is inextricably linked with the techniques practised in it, a short description of paper-making may serve to make certain matters clear.[6] Until the invention of the machine all paper was made by hand. The introduction of the machine did not, however, mark the end of hand-made paper and the decline of this branch of the industry was comparatively long-drawn-out.

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[1] The development of esparto grass and, especially, wood-pulp as raw materials for paper-making marks the creation of what is, from some points of view, virtually a new industry.

[2] On the introduction of the " Hollander " see Hunter: *op. cit.*, pp. 162–169.

[3] The records of Boulton and Watt show the installation of one of Watt's early engines at a paper mill at Hull in 1786. (Birmingham Reference Library—Boulton and Watt Collection.)

[4] Boulton and Watt had installed only four steam engines in paper mills by 1808, as compared with many more in other industries. A very few steam engines of other types were also in evidence by this time, at work in paper mills. See Hunter: *op. cit.*, pp. 336–340.

[5] A. & N. L. Clow: *The Chemical Revolution*, London, 1952, Chap. XIII; J. Wardrop: " Mr. Whatman, Paper-maker " in *Signature*, No. 9, 1938. Two patents for use of chlorine in rag-bleaching were taken out in 1792.

[6] More detailed descriptions of the techniques of paper-making will be found in Hunter: *op. cit.*, passim; Spicer: *op. cit.*, Chaps. II, IV and V; Clow: *op. cit.*, pp. 261–3; Andrew Ure: *Dictionary of the Arts and Sciences*, 3 Vols., London, 1860, Vol. III, pp. 383–400. R. H. Clapperton and W. Henderson: *Modern Paper-Making* gives detailed technical accounts of modern paper-making, but Chap. XVII on " Hand-Made Paper " is useful because of the similarities between modern hand-made paper-making and the techniques of the period under examination.

Until the introduction of esparto grass and wood-pulp, most paper was made from linen or cotton rags. During the period with which we are here concerned, rags were the sole major raw material and hand labour the main, though not the sole, method of manufacture. But the actual forming of a sheet of paper, whether by the rotary motion of the machine or by the separated actions of the craftsman, was only one stage in the manufacture. On one side was the preparation of the raw material; on the other the finishing and drying of the paper. The rags had to be prepared by sorting, cleaning, boiling and bleaching, from which stages they passed to the " Hollander " or beating engine. The resulting " stuff "—consisting of finely macerated fibres held in suspension in water—found its way, in the case of hand-made paper, to the " vat " where the paper-maker operated. The paper-maker or " vatman " then formed the sheets by dipping into the liquid a " mould " consisting, roughly, of a shallow rectangular box, the bottom of which was made of wire mesh or gauze.[1] The vatman dipped the mould into the vat, lifted it out, and gave it a peculiar shake, a movement which closed up the sheet and gave it the desired character.[2] The sheet thus formed is a deposition of felted fibres on the wire gauze. From the mould the sheets were turned out by the " coucher " on to a felt, until a pile or " post " of alternate felts and sheets of paper was made. After this the paper passed to the pressing, finishing and drying stages. In essentials this manual process of paper-making is the same to-day as it was throughout the period here under consideration and, indeed, very much earlier, as can be seen by comparison with such seventeenth-century descriptions of paper-making as those given by John Evelyn and Celia Fiennes.[3]

This very brief outline of the techniques of early paper-making serves to emphasise the dominance of two economic characteristics. Although as sketched above the tasks of the vatman and coucher do not sound complex, their labour was in fact highly skilled and upon this skilled work the industry was entirely dependent. Secondly, the preparation and finishing processes combined with the actual paper-making to necessitate a fair amount of fixed capital in the shape of buildings and plant. Thus the industry never, in this country, shared any of the characteristics of the " domestic system ". Any major cost-reducing innovations were likely to demand much technical ingenuity in that they would replace skilled labour; significant change was in general likely to be expensive. The atmosphere of conservatism which seems to mark the industry in the eighteenth century may be observed against this background.

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[1] Moulds—and the paper made therewith—were either " laid ", consisting, roughly, of a number of wires laid parallel to each other, or " wove ", in which the base was a woven wire gauze. " Wove " paper was introduced into Europe in the mid-eighteenth century. See Wardrop: *op. cit.*, and Hunter: *op. cit.*, Ch. IV.

[2] Clapperton and Henderson: *op. cit.*, p. 284.

[3] *The Diary and Correspondence of John Evelyn, 1620–1706*, ed. Bray, 4 vols., 1906, vol. II, p. 338. *The Journeys of Celia Fiennes* (1685–1703), ed. C. Norris, London, 1947, p. 124.

Throughout its history, demand has been growing, stimulated by the innumerable and diverse changes which promoted the use of paper. During the eighteenth century there was an ample home market to be captured from foreign suppliers and the English industry had simply to follow one or all of three courses: expand its output, using existing methods of production; make cost-reducing innovations; secure protection from imported paper, with which it was unable to compete in quality or price. The first and the third remained, for the most part, the chosen path before the last quarter of the century. Apart from the introduction of the "Hollander"—and even that did not come into general use until the middle of the century—all the significant improvements belonged to the latter part of the eighteenth century and the beginning of the nineteenth. Aware of their inability to compete with the French and other continental industries, English paper-makers were eager protectionists. Customs duties were such as to give marked preference to home production.[1] To the customs, however, was added an excise duty which may well have discouraged the flow of capital and enterprise to the industry.[2] Thus was the growth of paper-making limited and the scope of its enterprise curtailed. That branch of the industry making the lower qualities of paper seems to have seen such advance as there was in the first half of the eighteenth century, due probably to the lack of skilled workers and the fact that the excise duties pressed more heavily on the better grades.[3] From something like stagnation, the industry quickened into activity in the second half of the century. Increases in output are apparent after 1745 and become much more marked in the 1770s and 1780s.[4] During this period James Whatman was active in paper-making and his initiative may well have stimulated enterprise.[5] In general terms, rising prices, lower interest rates, and the pervading atmosphere of advance, both economic and scientific, played their due part in paper-making as elsewhere. Caught up in the whirl of industrial revolution, the industry was stimulated at once by sharply rising demand and—though this did not begin to make itself felt until after the end of the Napoleonic Wars—by increased supplies of rags arising from the growing output of cotton and linen textiles. The inflation of the war period posed many problems in acute form, but it was attended, nevertheless, by a great influx of capital into the industry. In 1789 the number of paper-makers' licences issued in accordance with the excise regulations was 392 in England alone; in 1816, 522; by 1825 the number had risen to 602.[1] Total English production of paper rose from approximately 9,500 tons in 1789 to 25,500 tons in 1825.[2] These figures pale into relative insignificance when compared with the rise later in the century when, to the spread of the machine, was added the production of wood-pulp paper, but they reflect, nevertheless, an important expansion of English paper manufacture.

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[1] See below, p. 37.

[2] See below, p. 36.

[3] These varied with the qualities of paper and were much heavier on the finer grades of white writing and printing papers than on the coarser types. See, e.g., the Schedules set out in 10 Anne, C. 18, and 21 Geo. III, C. 24.

[4] The statistics for output and revenue from the excise give some indication of English production, though for reasons which cannot be discussed here, their accuracy and value are limited. The figures are printed in Appendix 22A to the First Report of the Commissioners of Inland Revenue, 1857, in *British Parliamentary Papers*, 1857, Vol. IV.

[5] On Whatman, see Wardrop: *op. cit.*

II

Within this general development there were operating a number of economic pressures which combined to bring into existence, by the latter decades of the eighteenth century, significant combinations on both sides of the industry. These pressures arose mainly from three problems: the customs and the excise duties, the price of rags, the wages of labour. The rising prices from 1790 onwards gave weight to the force of their impact and shape to the answers which were found.

By the 1780s the English paper industry was entangled in a complex apparatus of taxation and protection, an elaborate mesh of excise and customs duties, of inspection and licences, of schedules, rates, imposts and drawbacks. The effective history of this also dates from the end of the seventeenth century. It falls into parts: the selection of paper as an item of excise revenue, which it was from 1712 to 1861,[3] and the protection and encouragement of the industry, by means of customs duties on imports and drawbacks on exports. Without entering into the details of this, it will suffice to note that an Act of 1711 imposed excise duties according to a schedule covering 12 specific types of paper, the rates varying from 4d. to 1s. 6d. per ream, and import duties according to another schedule covering some 37 types of paper, these ranging from 1s. to 16s. per ream. On unenumerated papers an excise duty of 12 per cent. *ad valorem* was charged and an import duty of 20 per cent. *ad valorem.*[4] All these rates were increased by 50 per cent. in 1714, by a further 5 per cent. in 1779 and again by 5 per cent. in 1781.[5] A new and most elaborate excise schedule was drawn up in the latter year setting out the values and sizes of 76 different sorts of paper, the whole being then divided into five Tables. On this basis new and higher duties were imposed and these were raised again in 1782, 1784 and 1787.[1] Meanwhile even larger increases had been made in the import duties, the basic protective difference thus remaining in force as the following examples may serve to illustrate:[2]

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[1] *B.P.P.*, 1857, Vol. IV, p. 175. The number of mills at work was not precisely the same as the number of licences issued, but the differences were not such as to detract from the significance of the rise shown by the figures quoted. In 1816, for example, an excise list records 506 paper-mills in England and Wales of which 503 were occupied. This list is in the Library of H.M. Customs and Excise for permission to work in which I have to thank the Commissioners of Customs and Excise and, in particular, the Librarian, Mr. R. C. Jarvis and his staff for their kind co-operation.

[2] *Ibid.*, pp. 154–5.

[3] An excise duty on the sale, though not on the production, of paper had been levied in 1643. E. Lipson: *The Economic History of England*, 1947 ed., London, Vol. III, p. 145. The *Book of Rates* of 1660 had fixed a heavy import duty on paper, and to this was added, by 8 and 9 Wm. III, C. 7, for two years only, an excise duty. See M. Plant: *The English Book Trade*, London, 1939, Ch. IX.

[4] 10 Anne, C. 18. Pasteboard and the like was also subject to duty.

[5] 13 Anne, C. 18; 19 Geo. III, C. 25; 21 Geo. III, C. 17.

(*per ream*)

	1752		1781		1784		1787			
Type of paper	*Import duties*		*Excise duties*				*Import duties*		*Excise duties*	
	s.	d. $\frac{1}{100}$	s.	d.	s.	d.	s.	d.	s.	d.
Printing, demy	6	3·97½	1	11$\frac{1}{10}$	2	5$\frac{4}{10}$	6	2	2	8¼
Cartridge	3	6·92⅝	1	11$\frac{1}{10}$	2	5$\frac{4}{10}$	5	9	2	8¼
Blue, royal	4	0·54⅜	2	2$\frac{4}{10}$	2	9$\frac{6}{10}$	8	6	3	0¾

Over and above these duties the import of paper from France was subject to heavy additional *ad valorem* duties. In consequence the bulk of our paper imports during the eighteenth century came from Holland and, to a lesser extent, from Italy.

When an industry is the subject of complex forms of taxation of this nature, it is natural that there should be co-operative action by the manufacturers to influence the government. Complicated protection and taxation must be amongst the best stimulants to industrial liaison, even though their action be inadvertent. At the end of the seventeenth century, paper-makers had represented their view to the government on various proposals.[3] The imposition of the duties provided a stimulus to industrial association, greatly strengthened by the complexity of the 1781 Table, and by the threat to protection implied by the negotiations for the Eden Treaty of 1787.

By the later decades of the eighteenth century the paper-makers were actively lobbying either to thwart the menace of freer trade or to secure simplification of the excise duties. During the period with which we are here dealing, the former presented no very stiff task. In the general picture, the paper manufacturers were one of many industrial interests which were at this time associating to form such bodies as the Manchester and Birmingham Chambers of Commerce and the General Chamber of Manufacturers. In the closer view, their attitude towards changes in customs policy was markedly opposed to that of industries powerful in these bodies. Thus they were, for instance, amongst the manufacturers who opposed the proposals, associated with the cotton, iron and pottery interests, for reciprocal tariff reductions in 1786.[4] Events of the time diminished the possibilities of less restricted trade which the negotiations of 1787 had portended and in fact import duties were still higher than excise duties in 1825[1].

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[1] 21 Geo. III, C. 24; 22 Geo. III, C. 66; 24 Geo. III, C. 18; 27 Geo. III, C. 13.

[2] 11 Geo. I, C. 7; 21 Geo. II, C. 2; 27 Geo. III, C. 13. T. Daniel: *The Present State of the British Customs*, 1752. The various import duties imposed by these Acts and those of 1711 and 1714 were over and above already existing customs duties, until the clarification of 1787.

[3] Rhys Jenkins: *op. cit.*, pp. 176–180. Plant: *op. cit.*, pp. 200–201.

[4] Witt Bowden: *Industrial Society in England towards the End of the Eighteenth Century*, New York, 1925, pp. 164 *et seq.*, p. 185.

The problems posed by the jungle of excise duties were more difficult. Rising prices distorted the valuation and schedules; papers appearing in one table might equally well be in a higher table, and then higher duties were payable; the opinions of excise officers clashed with those of paper-makers; paper was seized and fines imposed. William Lepard, a London stationer, put the situation clearly in a letter to Whatman in 1792. If a paper-maker makes a certain paper appearing in the second table worth 50s. to 50s. 6d. per ream, he has now to pay 7s. 5¾d. duty, but " if his customer wants one to be made of 2s. or 3s. higher value, then he is liable to pay 13s. 9½d. (bringing it into a Table I category, on price) and so get less for the stuff, tho' a better paper, or else run the hazards of being uneasy in his mind for having exceeded legal limits ".[2] By the 1790s the stationers and paper-makers were in regular association over such problems. The latter held their meetings in London, usually at the George and Vulture Tavern, Cornhill, and described themselves as " The Committee of Master Paper-makers ". Reports of their meetings were printed and circulated to members. In these organisations there took part such outstanding figures in the industry as Whatman, Portal and the London stationers, Messrs. Fourdrinier, who a few years later were to take the leading part in financing the development of the paper-making machine which, indeed, still bears their name to-day.[3] In 1794 both excise and customs duties were substantially simplified: the complex tables were abolished and the duties levied by weight instead of by ream.[4] Further simplifications were made in 1802 and thereafter the duties remained in basically the same form throughout this period.[5] Meanwhile, however, the doubling of the rate of excise duty in April 1801[6] brought about a battle in which the paper-makers were in alliance with the stationers, printers and booksellers. Parliament was petitioned and a committee reported in March 1802.[1] It is noticeable that the three paper manufacturers who gave evidence before the committee were regular attendants at the meetings of the Master Paper-makers Committee, and that two of the three wholesale stationers were men with whom the Chairman of the Master Paper-makers—William Balston—had many business dealings.[2] Between them they effectively demonstrated that the rise in duty by weight, as it bore heavily upon printing papers, was ruinous to the trade. They produced evidence showing that printing demy had risen from 14s. per ream in 1793 to 24s. per ream in March 1802, that this was largely ascribable to the increase in duty and that stocks lay unsold on their hands. At about the same time, Balston, on behalf of the Kent paper-makers, petitioned one of their M.P.s—Sir Edward Knatchbull, bewailing the declining manufacture, falling demand, mounting stocks and so on.[3] In 1803 the duty was reduced.[4]

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[1] Thus, for example, as from 1803: First Class Papers paid 3d. per lb. excise duty and 1s. 0d. per lb. import duty; for Second Class paper the comparable figures were 1½d. and 6d. See 43 Geo. III, C. 68 and C. 69.

[2] This letter is one of a number of MSS. relating to James Whatman (1741–1798) and his apprentice William Balston (1759–1849), who later founded the present Maidstone paper-making firm of that name. The MSS. are now in the possession of Mr. Thomas Balston, who is himself working on a history of these two paper-makers. I am greatly indebted to Mr. Balston for his kindness in permitting me to use these MSS., and for co-operation on a number of matters concerning them. They will be referred to hereafter as ' Balston MSS.'.

[3] On the Fourdrinier machine see Hunter: *op. cit.*, pp. 341–350.

How much earlier there had been a permanent organisation it is not possible to say, though as early as 1765, Whatman and Joseph Portal and six other signatories petitioned the Lords Commissioners of the Treasury, on excise matters, and described themselves as " the Committee appointed by a General Meeting of the Paper-makers of Great Britain ". (Customs and Excise Library: Excise and Treasury Correspondence, 1763–68).

[4] 34 Geo. III, C. 20.

[5] 42 Geo. III, C. 94.

[6] 41 Geo. III, C. 8.

III

The doings of the paper-makers' association in relation to the second of the three main problems—the price of rags—shed light on the economic ideas of the paper manufacturers and also indicate some of the difficulties in the way of securing unanimity in the association. In January 1799, after a meeting of the Master Paper-makers and the rag merchants, it was resolved by the former that no one of the forty-four signatories there present should pay more than 48s. per cwt. for a certain grade of rags. It appeared, moreover, to the meeting that " no other means can be *immediately* applied so *effectual* as a *suspension of the mills* of every consumer of rags in this kingdom for the space of one month ". It was hoped thereby to force the price down to 42s. and the industry as a whole was to be sounded on the project.[5] At a meeting of a special committee one month later, however, it was made clear that only a minority of the trade accepted this idea, and it was then recommended that measures similar to those adopted in Kent should be employed.[6] These were apparently devised by Balston and involved a total suspension for one month, provided that this should be followed elsewhere in England, and future suspensions on the same basis during the war if it were found " that the importation of Foreign Rags is inadequate to the Demand or so far lessened by the Intervention of unexpected circumstances as to require it ". The Kentish employers then went on to declare, significantly, that they were " fully sensible that the present high Price has not in the least operated to Increase the Collection of the Rags of this Country; and that the Advance alone has arisen from a Competition amongst ourselves ". In consequence, they resolved to supply rags from their stocks to such members as were unable to obtain them or to make an allowance of so much per vat during the time when the mill remained silent.[1]

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[1] Report from the Committee on the Booksellers and Printers Petition, 22nd March, 1802: *B.P.P.*, 1801–2, Vol. II.

[2] *Ibid.* and Balston MSS.

[3] Balston MSS.: draft petition and copy of a letter to Sir Edward Knatchbull, 9th May, 1802.

[4] 43 Geo. III, C. 108.

[5] Balston MSS. : printed resolutions of meeting, 21st January, 1799. It was admitted that the meeting felt itself " incompetent to the accomplishment of this purpose without the concurrence of the trade in general ".

[6] *Ibid.* : printed resolution of meeting, 20th February, 1799.

Familiar as such restrictive plans are, they are not always easy to operate and this soon became evident to the paper-makers. It was made particularly difficult by the wide dispersion of the paper industry, then as now, and the inadequacies of eighteenth-century communications. Kent was the main home of the trade but a number of other south-eastern counties also had several mills, notably Hertfordshire, Surrey, Buckinghamshire and Hampshire. Other important centres were Devon, Somerset, Yorkshire, Lancashire and Durham. Many other counties, especially in the Midlands, had some representation in the trade.[2] The extent to which, in time, both sides of the industry built up organisations working on a national scale is impressive, but it must be emphasised that the Master Paper-makers' Committee was essentially the mouthpiece of the southern manufacturers. This territorial limitation soon became apparent in the attempts to reduce rag prices. In March 1799 it was complained from the west country that many counties had failed to send deputations to the meetings : Oxfordshire, Worcestershire, Shropshire, Warwickshire, of those in the vicinity, as well as " Lancashire, York, Derby, etc., where our connexions in the trade lie and likewise Somerset, Devon, etc."[3] Printed letters were sent out from headquarters to the deputies of 21 counties,[4] asking them to call meetings to discuss the proposals. By May temporary failure had to be admitted, and with a rather naïve surprise it was ascribed to " the unexpected opposition which the measures adopted by the Trade have met from the Importers of Foreign Rags; who rather than submit to the Prices agreed upon, have actually housed them and are now withholding the necessary Supplies ".[5]

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[1] Balston MSS.: printed resolutions of meeting of the " Whole of the Master Papermakers of the County of Kent held this 14th Day of February 1799 at the *Star Inn*, Maidstone ".

[2] The geographical spread declined in the course of the nineteenth century. By the mid-century, a number of counties had lost their representation in the industry, e.g., Cornwall, Monmouth, Shropshire, Sussex, Norfolk and Essex. The leading counties in 1851 were: Yorkshire, Kent, Buckinghamshire, Lancashire, Devon and Durham. See A. H. Shorter: " The Distribution of British Paper Mills in 1851 ", in *The Paper-maker*, June 1951.

[3] Balston MSS.: W. Dunham to Nathaniel Davies (solicitor to the Master Paper-makers), 17th March, 1799.

[4] *Ibid.*: Nathaniel Davies to W. Balston, 15th May, 1799. The districts were: Berkshire, Buckinghamshire, Cumberland, Devonshire, Dorset, Exeter, Gloucestershire, Hampshire, Hertfordshire, Kent, Lancashire, Monmouthshire, Norfolk, Northants, Nottinghamshire, Oxfordshire, Somerset, Surrey, Wiltshire, Worcestershire, Yorkshire.

[5] *Ibid.*: Printed resolution of a " numerous and respectable Meeting of the District Committee of Master Papermakers ", London, 22nd May, 1799.

During the period 1790–1800, annual imports of rags, etc., for paper-making averaged 4,200 tons and probably accounted for nearly 30% of total English paper production.

In spite of this setback it was once again resolved to persevere with further suspensions, the mills in the home counties agreeing to reduce their work by $\frac{1}{6}$, and a general suspension was timed to start on the 1st June. A further meeting took place on the 12th, but by the end of that month defeat was admitted and this time the blame was laid upon " the seccession of their Bretheren in Hampshire and Berkshire ". As a result of this a rise in the price of paper was agreed upon. Here another rôle of the Master Paper-makers' organisation appears. At the same time, 26th June, as defeat is acknowledged, agreed prices for ten sorts of writing, and five sorts of printing, papers were sent out by Balston, as Chairman, along with the printed resolutions of the meeting.[1]

IV

Similar difficulties and similar achievements are apparent when we examine the response to the challenge of rising wages. This problem was the most important of the three. Just as on the employee's side the rising prices of the Napoleonic War period provided the stimulus for concerted, nation-wide action to raise wages, so on the employer's side it was the labour problem which finally brought into existence a Master Paper-makers' Society, in lieu of the earlier Committee, to oppose the actions of the men's organisation.

This organisation, the Original Society of Paper-makers, claims descent from the middle years of the eighteenth century,[2] but is said to have been founded as a body in 1800.[3] The journeymen paper-makers were first brought clearly into the limelight of official disapproval in 1796, when their latest attempts to secure an increase of wages provoked the masters to petition the House of Commons for leave to bring in a Bill against combinations in the industry. As might be expected, the employers were successful in this and in that year there was passed an Act " to prevent unlawful Combinations of Workmen employed in the Paper Manufactory ".[4] Its general terms embraced the prohibition of combinations of workmen for the purpose of increasing wages and the conferring on the J.P.s of the power to commit to the House of Correction journeymen paper-makers entering into such contracts, as well as various rights of summary jurisdiction.

It was agreed in the evidence heard which came, of course, only from the employers, that such combinations had been in existence since 1789.[1] How far this was true or how far that particular year was put forward with an eye upon its political significance it is not possible to say.[2] The masters represented themselves as having often been " obliged to submit " to the men's demands and stated that an advance of wages had recently been given. The cause of the petition was a demand for a further 5s. per week per man, refusal to grant which had provoked a strike amongst the men who were supported, it was said, from a general fund and who took action against " black-legs ", amongst whom were men from the North of England and from Scotland. A Dover paper-maker stated that the journeymen had consistently refused, between 1789 and 1796, to work in mills where Scottish or Irish workers were employed.[3] The reason is simple: Kentish wages were higher than any others in England and English wages higher than Scottish and also, probably, Irish.[4]

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[1] Balston MSS.: printed resolutions of a general meeting, London, 26th June, 1799.

[2] *Arbitration on the question of an advance in wages in the paper-making trade*, Maidstone, 1874. See in Webb Trade Union Collection, Part B, Vol. 73, Item 22, pp. 9—10 (in British Library of Political and Economic Science). The spokesman of the employees stated . . . . " we are an old trade society and there has long been this mutual agreement between the two parties. I suppose the history of our Society will go back 100 years."

[3] Spicer: *op. cit.*, p. 150. The precise evidence for this statement is not given, nor is that for the conflicting statement made in R. M. Rayner: *The Story of Trade Unionism* (London, 1929, p. 75), that the Original Society was founded in 1735.

[4] 36 Geo. III, c. 111.

Once again the limitations in the scope of the masters' representation are apparent. The petitioners described themselves as acting on behalf of all the master paper-makers of England, but this was not entirely true. Those giving evidence were Kentish manufacturers and the area affected by the strike was predominantly the south-east-Kent, Surrey, Buckinghamshire, Hampshire, Berkshire and Hertfordshire.[5]

The strike started at a Kentish mill. It spread from there and was answered by the lock-out and the " document " which became so well known in the later history of trade unionism.[6] At a meeting of the Buckinghamshire masters, at High Wycombe in February, 1796, it was resolved to give their own journeymen a fortnight's notice: at the end of this period " all our respective mills shall remain still until Mr. John Taylor's or any other Mills that have been or may be laid still on Account of Wages, shall be set to Work again ". Similar resolutions were made in other counties; a London meeting was held; instructions were given by the masters' committee to their solicitor; Kentish M.P.s were approached.[7] By May 1796 the Bill was law. By the 13th April, however, the same Dover paper-maker who was to give evidence before the Commons' Committee eight days later, was writing to the Chairman of the masters' committee and reporting that several of his men "have signed the Agreement not to assist any Club neither give any assistance to any Journeymen . . . However," he adds, "I have not yet employed those that have large families in consequence of their receiving considerably from the Club". He reported having only three or four who would not sign and "them I do not suffer to get employ in this Neighbourhood".[1]

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[1] *Journals of the House of Commons*, Vol. LI, 1795–6, pp. 585–6.

[2] Cf., however, Nathaniel Davies' remarks quoted below, p. 53.

[3] *Journals of the House of Commons*, Vol. LI, evidence of William Phipps, paper-maker of River, near Dover.

[4] *Report of Meetings between Employers and Employed in the Paper-making Trade* in *Webb Trade Union Collection*, Part B, Vol. 73, Item 21, p. 17. Not until the 1840's and 1850's were the wages in the various counties equalised. See also *B.P.P.*, 1825, Vol. III, pp. 557 and 601. Balston MSS.: R. Walker & Co., Kinleith Mill to the Journeymen Paper-makers, the Coach and Horses, Maidstone, 5th April, 1796.

[5] *Journals of the House of Commons*, Vol. LI, pp. 595–6.

[6] Balston MSS.: Printed resolutions of meetings of Buckinghamshire and Hertfordshire Masters, 4th February, 1796, and 5th February, 1796, respectively. S. & B. Webb: *The History of Trade Unionism*, London, 1926, *passim*.

[7] Balston MSS.: Various resolutions, letters, etc., including copies of letters between Sir Edward Knatchbull and Nathaniel Davies, in the course of which correspondence it becomes apparent that the former, as Davies himself later remarked to Balston, was by no means enthusiastic about the whole business.

Neither the law nor the concerted actions of the masters—or, at least, of an important section of them—was adequate to prevent the journeymen's successful combination to raise wages. By the turn of the century a further increase had been secured. A letter written in 1801 by a journeyman and which fell into the hands of authority, contains clear indications of the organised scope of the workers' union. Addressed to the men at a mill near Haslemere, it requests that their "division will come forward now, as much money is wanted". The writer goes on to state that, recently, at Maidstone "I was met by a very respectable body of our trade, 44 in number, where I produced the sick and secret articles of our trade, which were generally and universally approved and signed, and are to be printed; also the cards of freedom. Everything bears a favourable aspect and I hope will have a favourable issue. It would be a pity, after spending so many hundreds, to lose the cause at last for want of support. Manchester and Wells approve our plan and they say that they will establish it in every mill from Berwick to Land's End."[2]

This latter suggests very strongly the existence at this time of something similar to the organisation described in the "Rules and Articles to be observed by the Journeymen Paper Makers throughout England" produced to the 1825 Committee on the Repeal of the Combination Laws.[3] These rules mention five "Grand Divisions" throughout England: No. 1, Maidstone; No. 2, Carshalton; No. 3, Wells; No. 4, Leeds; No. 5, Manchester.[4] The divisions acted as regional centres for the collection of money, with headquarters at Maidstone, whither it had moved in 1815 from St. Pauls Cray, also in Kent.[5] The 1825 Rules and Articles are detailed and appear, moreover, to have the widest geographical application of all such sets of union rules submitted to the Committee. They cover, *inter alia*, the payment of clerks, the issue of cards, the keeping of books, the levying of fines for sundry offences against the rules of the society; they stipulate that divisional meetings shall be quarterly and that contributions shall vary according to the differences of wages over the country;[1] they require a seven-year apprenticeship, at the end of which time admission to the society cost 10s. for the son of a paper-maker and £2 for the son of a non-paper-maker; they limit the number of apprentices to one per vat, but grant certain privileges here in respect of the sons of paper-makers; they state that anyone bound apprentice in opposition to the journeymen after 1st July, 1803, shall not be acceptable to the society; they provide for payment to those who, with the support of the society, " leave for wages or customs "; and finally they seal the whole thirty-one rules with three four-lined stanzas which express sentiments of peaceful, co-operative and conservative rectitude.[2]

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[1] Balston MSS.: William Phipps to Hollingworth and Balston, 13th April, 1796.

[2] Quoted A. Aspinall: *The Early English Trade Unions*, London, 1949, p. 37.

[3] *B.P.P.*, 1825, Vol. IV, p. 556. See also evidence of Thomas Gardner, pp. 598–604. Cf. S. & B. Webb: *op. cit.*, pp. 77, 90, 92.

[4] To each of these divisions surrounding counties were attached: They were: No. 1—Kent, Herts., Bucks., Cambridge, Suffolk, Norfolk, Essex, Northants, Rutland, Bedford and Huntingdon; No. 2—Surrey, Middlesex, Sussex, Hants., Berks. and Oxon; No. 3—Somerset, Devon, Hereford, Gloucester, Cornwall, Wilts., Dorset, Radnor, Glamorgan, Pembroke, Carmarthen, Cardigan, Monmouth and Brecknock; No. 4—York, Lincoln, Derby, Nottingham, Westmorland, Durham, Northumberland, Cumberland, Leicestershire, Staffordshire, Worcestershire and Warwickshire; No. 5—Lancashire, Cheshire, Shropshire, Flintshire, Denbighshire, Caernarvonshire, Anglesey, Montgomery and Merionethshire.

[5] Spicer: *op. cit.*, p. 150.

By 1801, prices had soared to the first big peak in their upward movement: Silberling's index gives a figure of 166 (1790 = 100) for that year.[3] The highest point, 198, was to be reached in 1814. Both these times are marked by activity from both sides of the industry. About February 1801, the men secured a further increase in wages[4] and in April 1801, twenty-three employers of Kent and Surrey resolved to constitute themselves into " The Society of Master Paper-Makers of the Counties of Kent and Surrey, associated for the Purpose of resisting the illegal Combinations amongst the Journeymen Paper-Makers ".[5] They thundered against the formation of clubs, the " establishing of correspondences ", the raising of subscriptions and the " *adoption* of a *regular system* of *constant encroachment* on the *fair* and *established* customs and usages of the trade ". In particular they viewed with regret " the existing insubordination amongst the journeymen in Herts. and Bucks ". Accordingly, they declared themselves as determined " no longer to yield an unresisting compliance to the wanton, unnecessary and *extortionate demands* " and resolved to raise a fund of £1,500 to £2,000 by subscription from their members for the purpose of meeting expenses arising from the prosecution of workmen illegally combining. The leading firm—Hollingworth and Balston—alone contributed £200 to the fund.

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[1] Vatmen earning 20s. per week and over, exclusive of overtime, contributed 1s. per week; for 15s. the contribution was 9d.; for less than 15s., 6d.

[2] " May masters with their men unite,
Each other ne'er oppress;
And their assistance freely give
When men are in distress.

We covet not our master's wealth,
Nor crave for nothing more,
But to support our families
As our fathers have before.

Then may the God that rules above
Look on our mean endeavour,
And masters with their men unite
In hand and hand for ever."

[3] N. J. Silberling: " British Prices and Business Cycles, 1779–1850 ", in the *Review of Economic Statistics*, October, 1923. The figures quoted are those of the annual combined index of wholesale prices, covering 35 articles.

[4] *B.P.P.*, 1801–2, Vol. II, pp. 97–8.

[5] Balston MSS.: printed resolution of meeting at Maidstone, 30th April, 1801.

After the local meeting came the wider organisation. At a " General Meeting of the Master Paper-makers at the George and Vulture Tavern, Cornhill, London," in June 1803, it was unanimously resolved that it was " highly expedient the Whole of the Trade should be formed into one general Society, under the Denomination of, The United Society of Master Paper-Makers of Great Britain, associated solely for the purpose of resisting the illegal Combinations existing amongst their journeymen ". The resolutions included the establishment of a permanent central committee in London; the determination not to employ journeymen belonging to the club and agreement to employ those refusing to join or withdrawing from it, for terms of 3, 5 or 7 years; the intention to have one *or more* apprentices per vat and to introduce as many new men as the employers think proper and to demand from any new journeyman a certificate of conduct from his last employer. Finally, the employers expressed themselves as having no intention of resisting " any fair claims of the Workmen ".[1]

As with the 1796 petition and apparently in contrast to the range of the men's society, these resolutions did not have the width and solidity implied by the resounding title of the organisation. They were signed by 24 deputies, representing 120 masters distributed amongst counties as follows:

Kent	37
Bucks.	17
Devon	13
Herts.	9
Oxfordshire	2
Berkshire and Hampshire	14
Yorks., Notts., Lincs. and Derby	18
Northumberland and Durham	10

They claimed to represent 400 vats. This meant, roughly speaking, about $\frac{2}{3}$ of the English industry in terms of capacity and about $\frac{1}{3}$ in terms of firms.[2] The organisation included employers of importance and influence such as Hollingworth & Balston—William Balston was again Chairman, the Spicers, Portal and Bridges and the Fourdriniers, the last named being paper-makers as well as wholesale stationers. On the other hand, there was no representation from the growing Lancashire industry and it again became apparent in the course of time that unanimity was by no means easy to secure even amongst those who were members.

[1] Balston MsS. : printed resolutions of general meeting at London, 13th June, 1803.

[2] Cf. Spicer: *op. cit.*, Appendix VI, and *B.P.P.*, 1857, Vol. IV, p. 175.

V

Thus by 1803 both sides of the industry had regular, organised combinations, the men to fight for wages, conditions of work and the right to restrict entry into the trade; the employers to resist the men's demands and also to take concerted action on such matters as the price of rags and the undesirability of excessive competition.

The technique of restricting production and endeavouring to reduce rag prices was continued in later years. Attempts, for example, to reduce fine rag prices from 56s. to 52s. per cwt. were made in 1803, but without success.[1] The very failure of the efforts at suspension—crude as they were, but not unnatural—reveal the difficulties besetting an industry in which firms were many and widespread. And the obstacles grew more obvious. In 1812, when a comparable figure to the above was 76s., a Buckinghamshire paper-maker put the new position clearly enough: " it will be quite impracticable to suspend our works as we have formerly done on account of the great extension of the Trade by Machinery and the many new works which are daily carried on, the several proprietors of which we cannot expect will accede to such a measure ".[2] Moreover, this time a temporary depression had set in, with rag prices continuing to rise, but paper prices falling as production expanded. Nevertheless, Balston proposed a new suspension with a view to reducing the former and sustaining the latter. Various areas, including Devon and Somerset, agreed to such proposals in the summer of that year.[3] But again, there were voices prophesying a new order and seeking different methods. A correspondent of Balston's, dissenting strongly from these projects, pointed out that there was nothing to prove that the supply of paper exceeded the demand. He added, with a greater insight into the working of the market than the paper-makers' Chairman exhibited:

> " We should say that the trade of the stationers and the process of manufacture are by recent changes both operating this crisis that it may be delayed but cannot be prevented and the ultimate effect will be to place the manufactures in larger hands and either to render the stationer what he formerly was—the holder of stock —or to convert the maker into something resembling the stationer. At present the stationer has contrived to throw the burden of what idle stock there is upon the maker. He buys sparingly and not infrequently sells before he buys. The necessity, therefore, to which he reduces the manufacture by this mode of purchase we look

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[1] Balston MSS.: Thomas Curteis to W. Balston, 26th Aug., 1803; J. Morris to ditto, 13th June, 1804.

[2] *Ibid.*: J. Bates to W. Balston, 27th March, 1812.

[3] *Ibid.*: W. Balston to Bates, 2nd April, 1812; R. Turner to W. Balston, 21st July, 1813; T. Mann to ditto, 2nd September, 1813; H. Oxenham to ditto, 4th September, 1813; and various other letters, draft resolutions, etc., of that period.

> upon to be the most efficient agent of evil. How partial stoppage will remedy this we cannot divine . . . ."[1]

That some success and unanimity was achieved in this particular field of their activities is attested by the resolution of a general meeting at the George and Vulture Tavern in April, 1814, at which the " present high price of Raw materials " was set down as a subject of discussion for a further meeting to be called for July of that year. The masters expressed themselves " confident that as the object of reducing the present glut of Paper in the Market has been obtained by the unanimity in the Trade, that equal success will attend their efforts in reducing the price of Raw Materials to their proper standard, or at least in preventing any Increase in the present prices ".[2]

The fight against the men's " encroachments " continued. To the " document " and the intention to take as many apprentices and new men as possible, there was added the attempted establishment by the employers of relief funds. The Kentish employers, for instance, recommended, on the 26th June, 1803, the setting up at each mill of a fund for the relief of workmen suffering from sickness or misfortune or for the relief of journeymen on tramp. To it the masters were willing to contribute at the rate of one guinea per vat per annum, but the control was to remain in their hands, it being stipulated that each master should be treasurer.[3] From Hampshire it was reported that Portal's men had " totally relinquished the Club and have delivered over the Money subscribed to Mr. P. who has made a handsome addition to it for the establishment of a Clubb for the relief of their sick ".[4]

However much the doings of Portal's in this way coincided with Kentish practice, in others they disagreed. Whilst some Hampshire paper-makers were agreeing with the Central Committee's policy of a lock-out against a demand in 1803 for higher wages, Portal and Bridges were accused of paying their men a higher rate.[5] In a letter of August 1803, to William Balston, denying this charge, and laying the blame on an advance made in Kent earlier that year, they affirmed their willingness to reduce their wages in proportion as soon as the Kent masters had succeeded in effecting the reduction at present being tried. At the same time they took strong exception to making changes in the rules, customs and wages " to support the fancy and whim of individuals " and having received a " most unwarrantable letter " from their district Chairman, declared their intention in future of avoiding " all meetings whatsoever thinking it the surest Mode of being on the best of terms with the trade ".[6]

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[1] Balston MSS.: R. M. Bacon to W. Balston, 7th August, 1813.
[2] *Ibid.*: printed report of meeting, London, 18th April, 1814.
[3] *Ibid.*: resolutions of meeting of Kent masters, Rochester, 20th June, 1803.
[4] *Ibid.*: W. Gates to W. Balston, 26th June, 1803.
[5] *Ibid.*: J. Hooke to ditto, 12th and 15th August, 1803.
[6] *Ibid.*: Portal and Bridges to ditto, 25th August, 1803.

By the autumn of that year, rising rag prices and further troubles with the men produced the familiar woes and the familiar remedies: . . . . " the only means that I think are left is a universal suspension of the Manufactory . . . . . Do not let us be the dupes of the Men which I am persuaded we at present are . . . . Nor let the private Interests of any prevail over the general good ".[1] In Kent, in face of concerted labour action against attempts to reduce wages, appeals were made for unity. The " necessity and advantages of introducing fresh men into the manufactory " was stated; lists of men leaving or discharged from mills were circulated to employers.[2] But again the masters' unity wavered. Though Devon supported the masters fighting on the Kentish front, claiming that many new hands were introduced and that " clubs are drop't all thro' Devonshire ", from another source an approach to Manchester was urged.[3] In December 1803 and January 1804, deputations were sent to various parts of the country to seek support for the Kent masters in their protracted lock-out, but the show of unanimity from the north was not impressive. The Manchester manufacturers were willing enough to agree in theory to a projected nationwide suspension of work, but expressed great doubt that their neighbours and rivals at Bolton would agree. Moreover, they wanted a guarantee that in the event of their carrying it out and their men demanding an advance of wages on returning to work, the Kentish master would, in turn, agree to " strike their mills ".[4] The Somerset employers were willing to suspend operations if three-quarters of the trade in England would do likewise.[5] John Portal sent to Balston a sarcastic and unco-operative letter. Apologising for his absence when Balston and his deputation arrived, but appraised of their desire for his assistance by the suspension of his own mills, he wrote:

> . . . . . if by so doing it will be of the least advantage to the present unfortunate distress of the Makers in Kent, we will most readily silent them, confiding that you have well weighed this course that you are about taking being to the advantage of you Gentlemen, as well as to the Trade in general. Altho' we are perfectly ready to lay our Mills still, you will understand that we shall not think of discharging our Men, we shall keep them in pay, and I fear spoil them by paying them for *not* working; nevertheless, if this mode is the wish of you Gentlemen, *it shall be done*. I confess my doubts are *strong* upon the subject. I again lament not being at home this morning (apart from the pleasure of seeing

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[1] Balston MSS.: G. Pike to ditto, 1st September, 1803.

[2] *Ibid.*: printed resolutions of a meeting at Maidstone, 19th September, 1803; and several letters, drafts, etc., of this period.

[3] *Ibid.*: Oxenham and Pim to W. Balston, 1st October, 1803; W. Garnett to ditto, 30th September, 1803.

[4] *Ibid.*: W. Garnett to ditto, 28th December, 1803.

[5] *Ibid.*: " the principal Paper Masters of the County of Somerset " to ditto, 28th December, 1803.

> your party), I might at least have had the satisfaction of hearing your good reasons for wishing to lay these Mills silent which are working upon an average of 3s. to 5s. under Wages that you Gentlemen in Kent are now holding out to set your Mills to work upon; excuse me for speaking plain, but I really wish to do the best for you Gentlemen, as well as for the Trade in general; and I confess I fear the plan which you are wishing to adopt will not succeed: surely where Men are working upon *low wages* comparatively speaking ought not those Men to be *kept at work* as an example for the unruly, instead of throwing them *out of work*? However, the Gentlemen of Kent, I make no doubt, are the best judges upon the occasion, being well versed in the art of managing Journeymen Papermakers: I can only repeat if you think your difficulties in Kent are more likely to be got over by this district laying their Mills still, we will most cheerfully silent *ours*. I remain, Dear Sir, and with best Compliments to your party,
>
> Your most obedient
>
> Very Faithfull Servant,
>
> John Portal.[1]

In the event, the Kentish masters had a temporary success in their own county, the men returning to work in accordance with the masters' terms. This was almost certainly due to the employers' greater financial resources. A letter from a Maidstone journeyman to a tramping " brother " in May 1803 speaks of their being " under very great expence to support their families ". It was then amounting to nearly £20 per week and it is not likely that their resources would be able to last for long at such rates.[2] But their success left its mark in the restrictive clauses of the " Rules and Articles ", and it was soon apparent that the journeymen were not likely to accept the loss of an independent relief fund, away from the control of the masters. Before the Napoleonic inflation had run its course, the workers were able to raise their wages again and it is evident that they contrived to organise their own funds and their own club before the repeal of 1825 removed objections and barriers.[3]

[1] Balston MSS.: John Portal to W. Balston, 16th December, 1803.

[2] *Ibid.*: Joseph Purcell to W. Gill, 20th May, 1803. The tramping journeyman was a feature of this and of many other industries at the time. Cf. Spicer: *op. cit.*, pp. 158–9, and E. J. Hobsbawm: " The Tramping Artisan ", in *Economic History Review*, 1951.

[3] *B.P.P.*, 1825, Vol. IV, pp. 598–604: Evidence of Thomas Gardner. Balston MSS.: W. Phipps to W. Balston, 24th April, 1804; Spicer: *op. cit.*, p. 151.

VI

What of wage rates? The vicissitudes of the struggle on this point follow closely the general course of prices as suggested by Silberling's index (1790 = 100):

5-yearly averages

1797 – 1801 = 154.2
1802 – 1806 = 153.8
1807 – 1811 = 165.6
1812 – 1816 = 169.4
1817 – 1821 = 134.0
1822 – 1826 = 110.8

In the first period, and earlier, there were increases; in the second and fifth the masters succeeded in reducing wages, but during the third and fourth a rise had been secured; in the sixth period, the low relative average figure conceals the boom in 1825 which brought another increase, although this was later swept away and, in fact, wages finished up in 1840 at about the same level as during the period 1817–24.[1] It is impossible here to give detailed figures for wages, not simply because Kent wages were higher than elsewhere, but also because the money wages were surrounded by sundry differing customs and allowances; wages varied with the type of paper made and were in fact partly piece-rates and partly time-rates. They were unquestionably amongst the highest workmen's wages of the time, being roughly the same as those of mechanics and engineers. The examples given below are derived from a schedule drawn up by the Kentish masters in 1803; as it formed part of their attempt to reduce wages, the rates represent a decrease on previous figures.[2]

	Class I	*Class II*	*Class III*
Vatman	4s. 1d. per day	3s. 8d. per day	3s. 7d. per day
Coucher	3s. 11d. per day	3s. 6d. per day	3s. 5d. per day
Layer & Dryworker	3s. 2d. per day	3s. 2d. per day	3s. 2d. per day

(The classes refer to types of paper)

The day was to be not less than 10 hours, exclusive of meals, and a 6-day week was to be worked. A day's work was to consist of so much paper according to laid-down scales. Beer was provided or 1s. a week allowed in lieu; specified allowances of 5s. or 7s. 6d. were paid in lieu of the Easter, Whitsun and Christmas holidays. Overtime was to be paid at full rates.

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[1] Figures for wages were drawn from: Balston MSS.: various letters and resolutions of meetings; *Journals of the House of Commons*, Vol. 4, pp. 585–6, 595; *B.P.P.*, 1801–2, Vol. 11, pp. 97–8; 1825, Vol. IV, pp. 598–604; 1837, Vol. XX, p. 49 (Select Committee on Fourdrinier's Patent); Spicer: *op. cit.*, *passim*; "Arbitration on the question of an advance in wages in the paper-making trade, 1874".

[2] Balston MSS.: resolution of meeting at Rochester, 20th June, 1803. For mechanics' and engineers' wages, see Sir A. L. Bowley: *Wages in the United Kingdom in the Nineteenth Century*, Cambridge, 1900, Table facing p. 123.

Although, for the reasons already indicated, it is difficult accurately to evaluate changes in these wages, an approximate comparison between the rates paid by Whatman in 1792 and those given before the Committee on the Repeal of the Combination Laws of 1825 suggests an increase in money wages of about 60 per cent., probably more, as well as a shortened day and a raised beer allowance. This would seem to be an increase higher than normal: Tucker's index of wages of London artisans, for instance, shows an increase of only 46 per cent. between those two dates, whilst Wood's gives 55 per cent. as an average rise from 1790 to 1824 and 36 per cent. from 1795 to 1824.[1] Moreover, there is no reason to suppose that conditions of work and environment changed for the worse, as they did in some industries.

In short, then, the vigour and unity of the employees' organisation was a most powerful factor in maintaining or improving standards in this industry. By 1825, machinery had made only a partial impression on the trade,[2] and this story takes no account of those who might have lost their employment, or their status, as a result of the machine. Some may well have done: in 1816 the journeymen paper-makers petitioned the House of Commons, alleging distress and asking for relief and the suppression of "Fourdriniers Patent Machinery"[3]; the output of hand-made paper began to fall after 1805. Nevertheless, rapid decline did not set in until the 1830s and, similarly, it was not until 1829 that the annual number of paper-makers' licences started to fall as the increased productivity of the larger, machine-using, mills made its mark. Thus was the combination of a highly organised trade club, plus a comparatively long-drawn-out process of mechanisation, successful in allowing standards to be raised and adaptation to take place without extensive social outcry or hardship.

VII

In conclusion, it is clear that on both sides of the industry organised combinations not merely existed but led an active life, quite irrespective of the combination laws. The general Acts of 1799 and 1800 had apparently no more effect on either side than had the special Act of three years earlier. The latter provided a model in so far as the provisions relating to summary jurisdiction were concerned for the Act of 1799.[4]

The 1800 Act made it illegal for masters to combine for the purpose of reducing wages, increasing or altering the usual hours of labour or increasing the quantity of work to be done. It provided, however, for harsher justice for employees than for employers: a workman could be cross-examined on oath and sent to prison; neither fate was to befall a master, save in the improbable event of his not being able to pay a fine not exceeding £20.[1] Whatever may have been the effect of the Six Acts in driving incipient trade unionism underground, certainly the combination Acts deterred neither masters nor men in the paper industry from actively combining. Nor, moreover, did the common law doctrine of conspiracy in restraint of trade deter the masters' combine from the pursuit of its various restrictive practices.

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[1] R. S. Tucker: "Real Wages of Artisans in London, 1729–1935", in *Journal of the American Statistical Association*, Vol. XXXI, 1936.
C. H. Wood: "The Course of Average Wages between 1790 and 1860", in *Economic Journal*, Vol. IX, 1899. See also Bowley: *op. cit.*, p. 126.

[2] By 1825, approximately 50% of the total U.K. output was still hand-made.

[3] *Journals of the House of Commons*, Vol. LXXI, p. 130.

[4] Aspinall: *op. cit.*, p. xii.

Both sides were quite well aware of the law. There may be some truth in the evidence offered to the 1825 Committee to the effect that the journeymen paper-makers knew little about the existence of the combination laws.[2] But certainly some of the trade did in 1804. An anonymous letter " addressed to the Master Paper Makers, George and Vulture Tavern, Cornhill ", in March of that year, referred to the current battle in Kent. Announcing the journeymen's " unalterable determination . . . . not to submit by any means to your Arbitrary and Unjustifiable Articles and Resolutions ", and intimating that they were ready " at your Notice to serve upon the same Wages and Customs which they enjoyed before you discharged them ", it adds with a flourish that " the Amendment to the Combination Act expresses that Masters shall not combine to reduce Wages or lengthen the time of labour ".[3]

The masters, for their part, were more than once reminded by their solicitor—who seems to have served them long and well—of the illegalities of their procedure. His letter of March 1799 may be quoted *in extenso* as an example of legal discretion, as a confirmation of Adam Smith's pithy remark that " whoever imagines . . . . that masters rarely combine is as ignorant of this world as of the subject "[4] and as a final comment on the futility of trying to legislate out of existence something created by powerful economic forces, without at the same time dealing with the forces themselves.

> . . . . " When I first had the Honour to be concerned for the Trade it struck me that the Meetings for the purpose of reducing the price of Rags and laying the Mills still (which had often been practised) were illegal and therefore took the opinion of Counsel on that point who concurring that such proceedings were illegal I submitted that opinion to a very numerous meeting of the Trade in the Yr. 1789 and to various subsequent meetings in that and the following year when they determined nevertheless to persevere in the usual mode of effecting a reduction, under the Idea, that as nobody

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[1] 39 and 40 Geo. III, C. 106.

[2] Evidence of Tho. Gardner: *Q.* " Do you know what the opinion of your workmen was respecting the combination laws which were repealed last year; how far they considered them fair between masters and men ? "
A. " I think upon the whole they knew very little about the laws; I have never heard anything said of them."

[3] Balston MSS.: anonymous letter to the Master Paper-makers, 6th March, 1804.

[4] Adam Smith: *Wealth of Nations*, ed. Cannan, p. 66.

> would be injured by those measures that (they) could not conceive that any person would indict them and were therefore determined to run that risque . . . ."
> . . . . " Should it so happen from any extraordinary orders that the Market should not be sufficiently supplied with Paper (of which, however, I presume there is no fear) perhaps Government might take it up or as the Excise must evidently know (from the returns made to them) of the stoppage of the Mills and they thereby receiving a Temporary diminution (tho' I admit in the end it would not be prejudiced) do you not think the Commissions of the Excise would take up the affair ? "
> . . . . Ps. . . . . . " I need not hint to you the Mischief which might arise from the resolutions getting into the hands of persons who are not well wishers to the Trade."[1]

The London School of Economics.

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[1] Balston MSS.: Nathaniel Davies to W. Balston, 19th March, 1799. Davies' successors were still serving the Master Paper-makers in 1825. See *B.P.P.*, 1825, Vol. IV, p. 604.

A Cumberland Colliery During the Napoleonic War

By OLIVER WOOD

Whitehaven Colliery, the property of the Lowther family, had been successfully worked since the 17th century, and in the following century, thanks to the business acumen of its owners and the genius of its managers, Carlisle Spedding and his son James, it became a source of wonder to contemporary visitors and an object lesson in mining practice.*

Its coastal position and proximity to Ireland aided the development of the colliery. The difficult and expensive movement of coal by land was avoided and Ireland, after a short and cheap sea passage, afforded a ready market for coal. By 1700 Sir John Lowther had gained almost a monopoly of the coal trade in Dublin which his family was to retain for over a century. Down to the middle of the 19th century Cumberland coal was mined primarily to provide fuel for Ireland, since little was needed to satisfy the demand in a thinly-populated county; it was not until after 1850 that the local iron industry retained a substantial proportion of Cumberland coal. The rise of Whitehaven, Workington, Maryport and Harrington was based upon the exploitation of the coal deposits and in particular upon the coal trade with Ireland.

A visitor to Howgill Colliery, the western division of Whitehaven Colliery, described it in 1793 as the most extensive in Britain (it covered 2,400 acres) and King Pit, sunk to a depth of 160 fathoms, as the deepest pit in the country.[1] But at this time Whitehaven Colliery was suffering setbacks—the export of coal declined from 158,124 tons in 1788[2] to 90,628 tons in 1802[3] and much dishonesty and indiscipline prevailed in the pits, owing largely to the incompetence of the manager, a Mr. Wyley, who neglected his work to satisfy his taste for liquor. He was succeeded by John Bateman in 1802 who was re-engaged at £500 per annum in the post he had formerly occupied between 1781 and 1791.[4]

Within a year Bateman made his presence felt and in 1803 the export of Whitehaven coal rose to 153,728 tons. But to eradicate the slackness which had grown up in the colliery during his predecessor's tenure of office was an arduous task and the many letters written by Bateman to his employer Viscount Lowther, later Earl of Lonsdale (preserved in the

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* "There is Scarce a Viewer or Enginear of Notice in either Tine or Wear but has been Solissting me to take a trip with me to see you and your works" (William Brown to Carlisle Spedding, July 10th, 1751—*Letter Books of William Brown*).

Lowther Estate Office, Whitehaven), provide a detailed picture of the difficulties which faced colliery managers in the early 19th century.

In view of the shortage of labour, Bateman had to walk warily, but by the dismissal of the worst offenders, and by a mixture of firmness and persuasion he was able to secure the diminution, if not the complete cessation, of dishonest practices. The worst abuse was the bribery by shipmasters of waggoners and bankmen to give excess measure.[5] When exact measure was insisted upon the ships' captains protested volubly, but their clamours were silenced when a test of several waggons showed they had no cause for complaint.[6] Other forms of fraud were the insufficient filling of baskets and pay claims for more coal than had been cut; at Craig Pit in one week the banker, hooker, filler and haggers tried to secure payment for 62 baskets more than had been sent to bank.[7]

Lack of manpower was a major difficulty. Sickness, enlistment in the Forces, competition among employers to secure miners and the rapid turnover of labour made the colliery manager's task extremely troublesome. Between October 1810 and May 1811, 43 miners left Whingill Colliery (the eastern division of Whitehaven Colliery) and not one of them was a native of West Cumberland: of the 43 absentees, 19 were Irish, 19 were from Newcastle, 2 were Scots; and Wales, Lancashire and Alston Moor had provided one each.[8] Competition to obtain men undermined the authority of the employers; demands for higher pay, if rejected, were followed by strikes or threats of strikes, or by migration to other collieries. Such competition meant that " the men all become Masters, and more Money is given for work than it deserves, & they get Drunk with the Overplus ".[9]

" Poaching " of miners by coal-owners from each other was a common practice at this time. Although vociferous in his condemnation of others for employing Whitehaven men Bateman was very ready to hire men belonging to the Curwen collieries at Workington some eight miles further north. He refused a request from Mr. Curwen's agent not to employ any of the Workington miners and he wrote, " I think it would be very wrong to stop taking their men until we have enough, in fact we might be some years in getting to the extent we aim at, as they are better situated for getting the Newcastle Colliers than we are, they call there first, as their Colliery is on their way to this Place."[10] Curwen had agents in Whitehaven offering the men higher wages if they would move to Workington; he " offered the Haggers 4s. 6d. per day certain, if they could not make that sum at their price of Hagging Mr. Curwen would make it up to them, the women fillers of Coals he offered 12s. per score (*above double our price*) . . . they would give in hand on their arrival at Workington from one to five guineas for each Hagger."[11] However, on June 11th, 1803, an agreement was made by the rival employers not to hire each other's men for the next seven years.[12]

In 1810 Bateman found that his labour supply was being threatened by Mr. Christian who, by offering higher wages than those being paid at Whitehaven, was taking many of the best hewers to Broughton Moor Colliery. Bateman informed his employer, " Our men say they earn a Shilling an Hour at Mr. Christian's works with us they could earn 5d. to 6d. per Hour with such difference of Wages all our men will go if he can employ them."[13] But in November 1810 an agreement was made with Mr. Christian not to employ each other's workmen and to discharge men they had already acquired from each other, an agreement that prevented the Whitehaven miners from coming forward with a demand for a 10 per cent. increase in wages.[14]

Newcastle colliery proprietors also shared in this poaching of colliers and attempted to thwart their employees' demands by hiring Cumbrian miners.[15] In February 1804 a Newcastle basket-maker was trying to obtain carpenters and basket-makers from Whitehaven by offering them 21s. to 22s. per week, free house and coal and 40s. for removal expenses. A few months later it was found that a Peter Curry had taken up employment in a Whitehaven mine solely in order to recruit men for work in Newcastle collieries.[16] But many Newcastle men were employed at Whitehaven—in March 1804 19 haggers and 5 sinkers or drifters were working in the Whitehaven mines.[17] These men, however, did not remain long since they found the coal hard to work and also feared arrest, since they had broken their bonds at Newcastle.[18]

Bateman found that competition for miners compelled him to meet recurrent demands for higher wages, demands that were difficult to resist when the men could obtain better pay at nearby collieries. In 1805, within a period of six weeks, 30 haggers, about one-fifth of the total employed, left Whitehaven for better-paid employment elsewhere.[19] Agreements with other colliery proprietors not to employ each other's men helped to relieve the pressure; after the agreement with Mr. Curwen, Bateman could write, " Our Haggers' Conduct is very much altered for the better since they find they cannot when loose go to Workington, they follow their work better & are far more moderate in their expectations about the Prices of their Works."[20]

But the only effective answer to demands for wage increases was sufficient labour supply, and Bateman took on all who offered themselves since, in his own words, " having men to spare will be the first thing to quiet those we have."[21] Advertisements for miners were inserted in Newcastle, Scottish and Manchester newspapers as well as local publications. He reported in June 1804, " A great number of Irishmen from the County of Down have very lately come into Cumberland—we have got several to work some offer well and others were very indolent and went to country work, several Scotchmen have come over since Whitsuntide as wages there are very much come down the last term. We had rather have one Scotchman than five Irishmen, if we can keep the Scotchmen a few Weeks they are sure to turn out well." To attract men premiums of up to four guineas were offered, but at this time Newcastle miners were being offered 10–14 guineas binding money on signing articles to do eleven months' work[22] and a number of Whitehaven men were drawn away by the more attractive sums. Frequently Bateman urged Viscount Lowther to use his influence to prevent the impressment of coal miners; in 1803, 23 of his men were in the militia, 16 of these being hewers.[23]

To retain his colliers Bateman tried to develop the binding system, a system never widely or firmly established in Cumberland. He wrote to his employer (Nov. 15th, 1802), " we have got all the Colliers bound except James's Pit men & we will prepare an article for them this week." The men at James's Pit were bound and thus the men were " safe for 11 months."[24] Two months later he persuaded the waggoners, carpenters, smiths, bankers, engine-men, hookers and fillers to sign an agreement to remain until Martinmas on the old terms.[25] Some men, however, broke their contract and found employment at Workington. A warrant for their arrest was obtained and the men were compelled to return to their work at Whitehaven.[26] But Bateman was unable to make the binding system a permanent feature, for he makes no mention of binding in his many letters written after the expiry of the above contracts. Presumably the miners, well aware of their scarcity value, were unwilling to enter into long agreements.

In his anxiety to obtain more men, Bateman tried to secure the services of disbanded soldiers. One letter[27] of his stated, " We wrote to our agent, Mr. Dixon, in Liverpool to be very active in procuring us all the Miners in the 9th Brigade which are expected to be disembodied very soon at Liverpool & we authorised him to give the Sergt. Major 5s. for every Miner he could influence to come hither, and 10s. 6d. to every Miner as soon as the Liverpool traders were ready to sail to this Port, to pay their passage and to promise them 3 Guineas each if they remained 26 weeks in your employ with the further advantage of a free house ". Unfortunately this plan came to nothing for the troops were not demobilised.

In such conditions it was natural that the Whitehaven miners should form a trade union despite the Combination Laws. In March 1811, Bateman wrote, " I am sorry to say nearly all our Haggers and Fillers are forming a very powerfull combination to advance their wages, report says that the advance is to be very considerable, they meet publickly now twice a Week to collect subscribers & to swear them to be true to each other we are told that a part of their Oath is, not to tell what they want untill they have got the Number they want, at present they say Their Number is near 200 who have subscribed to their Rules . . . today we find that one of their Rules is, that if any Class of Workmen want an advance of Wages & and it is not given them, all the Brotherhood are to lay Idle until their demand be complied with, by this plan they can stop the works whenever they please."[28] But this union was short-lived and the threat of a strike was overcome. Hewers and fillers at Croft Pit refused to work but soon gave way when they were faced with eviction from their homes which were the property of the Lowthers.[29]

II

Despite his many difficulties Bateman succeeded in raising output at Whitehaven and was responsible for much new work. Many new pits were sunk, the most important being William Pit on the shore near Bransty, begun in 1804 and completed in 1812. Coal was first shipped from this pit on March 10th, 1806,[30] and the pit worked continuously for 133 years. William Pit in the early 19th century was regarded as the best equipped pit in the kingdom—a pumping engine erected in 1810 could lift 320 gallons of water per minute. The original winding engine, a Heslop engine made at the Seaton Ironworks, did service until 1850 when it was replaced by a high pressure engine.[31]

During the Napoleonic War there were few major changes in mining technique. Miners continued to reach the coal face in a number of pits, in the same way as their forefathers had done in the 17th century by means of bearmouths or day-holes, i.e. openings in the side of a hill, and descending to the bottom of the pit along sloping roads cut through the rock. As late as 1816 there were three bearmouths at Howgill and four at Whingill.[32] To remove the coal the bord and pillar system was exclusively employed and as the pits became deeper the pillars increased in size. At Whitehaven in 1765 the pillars were 15 yards square and by 1800 they were 18–20 yards square, only about one-third of the coal being extracted, the other two-thirds being left to support the roof.[33]

Underground haulage was then the work of men and horses. In Main Band collieries light wooden bogies fitted with small plain wheels, drawn by men, were used to bring the coal from the workings to " stears " or turning places. There the bogies were emptied into baskets which were placed on larger bogies capable of carrying two baskets each, and the bogies, after being made up into trains or " rollies ", were drawn by horses to the shaft.[34] The employment of horses underground was possible only in the thicker seams and as late as 1801 in some of the Whitehaven pits coal was conveyed from the face to the bottom of the pits, not by horses, but by men.[35]

Steam engines had been in use at Whitehaven for pumping purposes since 1715 but the application of steam to the winding of coal was delayed until much later in the 18th century. In 1787 the first recorded departure from winding coal by horse gins in Cumberland was made at George Pit, Whitehaven, where, on the same shaft as the rope rolls, an overshot water-wheel driven by water pumped by the " fire-engine " was erected.[36] Water-wheels with double buckets continued to be used at Whitehaven until 1803.[37] The first direct application of the steam engine for winding coal at Whitehaven took place in 1791 when a Heslop engine was erected at Davy Pit. This, contrary to the view hitherto held, was not the first steam winding engine in Cumberland. By an agreement[38] dated July 1st, 1788, between John Christian and Messrs. Boulton and Watt, the latter undertook to provide a 6 h.p. " Steam Engine of the said James Watt's invention . . . the stroke and piston thereof to be acted upon by the force of steam both in its ascent and descent with a rotative motion of his the said James Watt's invention applied thereto for the purpose of drawing coals and water from the said Colliery." It was " calculated to wind Coals at the rate of 4½ feet per second " and was erected at Workington Colliery in 1789. Additional steam winding engines were soon in operation at the Whitehaven and Workington Collieries and by displacing horses they reduced costs considerably. Until the adoption of engines, horses in the mines were both numerous and expensive; in 1781, 313 horses were employed at Whitehaven Colliery.[39] Many horses continued to be used underground and on the surface for haulage purposes. After the adoption of the winding engine it was calculated (in 1802) that a yearly output of 80,000 waggons of coal at Whitehaven would require 306 horses and 182 hewers.[40] A year later Bateman estimated that each horse at the colliery cost 27s. to 29s. per week.[41]

Between 1802 and 1811, Bateman was busily engaged in replacing the wooden railways underground by cast iron railways and one such metal tramway at Wilson Pit, completed in 1806 and some 1,100 yards long, would, he believed, save £1,560 a year in horse labour compared with the old method of conveying coal underground by means of sledge trams.[42] He also experimented with the flat ropes invented by John Curr, but at first (1803) he did not find them satisfactory, nor did he like the high price charged for them, a flat rope of 130 fathoms costing £67 4s. compared with £20 charged for an ordinary rope.[43] An attempt was made in 1812 to haul coal from Croft Pit to the harbour using an " iron horse " or locomotive invented by Taylor Swainson, the brilliant but drunken engineer of Whitehaven Colliery. The engine answered admirably, but the track was not strong enough to bear the weight.[44]

Ventilation was always a serious problem in the Cumberland mines. Carlisle Spedding invented the system of ventilation known as " coursing the air ", by which the current of air was directed up certain workings and down others until it ventilated the whole waste. This involved numerous stoppings and doors to compel the air current to sweep through every part of the mine between its entry at the downcast and its exit at the upcast shaft.[45] This system, which appears to have been in use as early as 1747,* was soon adopted in other areas and persisted until it was superseded by Buddle's method of " splitting the air " (double or compound ventilation) which was first carried out at Wallsend Colliery in 1810.

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* The *Gentlemen's Magazine* (1747, Vol. XVII, p. 327), describing a pit explosion at Whitehaven, stated that it " beat down a good deal of the partitions, and some of the stops under-ground ".

III

During the war years the output and shipment of coal from Whitehaven steadily increased and this was accompanied by a rise in the price of coal. A 42 cwt. waggon of coal shipped from Whitehaven cost:[46]

Year		Year	
1801	10s. 6d.	1805	17s.
1802	13s. to 14s.	1812	18s. 6d.
1803	15s.		

Price increases were usually initiated at Whitehaven and were immediately followed at the other Cumberland ports. This often led to friction with the ships' captains. Thus in December 1805 an attempt to raise the export price of coal to 18s. per waggon at Whitehaven led to a buyers' strike and for three months the irate shipmasters refused to take on cargoes at the new price. John Bateman, the manager of the colliery, found himself the target not only of abuse and scurrilous letters but also of physical violence, and had to be escorted by a bodyguard to and from his home. A settlement was reached which was a defeat for the Lowthers—the price remained at 17s. per waggon, but the waggon was now to contain 26 instead of 24 Cumberland bushels, with the result that Viscount Lowther received 15s. 7d. for the same amount of coal that had formerly brought in 17s.[47]

By 1806, Whitehaven Colliery was making a profit of over £30,000 per annum. To encourage production bonuses were awarded to viewers and overmen when profits reached £30,000—two viewers each received a bonus of £148 in addition to their annual salary of £152 and overmen who were paid £52–£82 also received additional sums varying from £38 to £88.[48] Bateman's anxiety to recruit more men for the mines is easily understood for each hewer earned for his employer a profit of £4 4s. per week.* He reported, "The difference between having & wanting them (i.e. hewers) cannot be less than 200£ per annum each".[49]

Production costs increased as the mining industry developed in the course of the 18th century; deeper pits, longer distances from the face to the shaft, the provision of steam engines and rising wages accounted for the increase. At Whitehaven the average cost of getting coal in 1709 scarcely exceeded 1s. per ton,[50] but by 1757 it cost 1s. 9·8d. per ton of coal at Thwaite Pit[51] and in 1800 the cost of working Howgill coal rose to 2s. 5½d. per ton.[52]

Hewers' wages were based on output, the rate varying not only from one pit to another, but also in different seams in the same pit, higher rates being paid to those working in the more difficult seams. Other colliery workers were usually paid on a time basis. Thus at Whitehaven in 1765 hewers earned from 1s. 6d. to 1s. 8d. per day for nine or ten hours' work and other workmen received a fixed daily wage, a shilling being the minimum.[53] By 1800 wages were increasing rapidly owing to the shortage of labour and Whitehaven hewers were then earning about 3s. per day.[54] Three years later the average hewer was earning 21s. to 24s. per week, although the best hewers could earn as much as 35s. per week.[55] Engine-men, underground carpenters and smiths then received 2s. 6d. per day.[56] These wages were subjected to deductions for coal, candles and gunpowder supplied to the men, for the sharpening of picks and for " dirt " in the coal sent to the surface. Whitehaven miners were usually provided with cottages rent-free but this was a mixed blessing for recalcitrant miners were disciplined by eviction.

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* "The profit upon each Hagger until we have enough at 2 Waggons per day is 14s. or £4 4s. per week" (Bateman to Viscount Lowther, December 12th, 1802).

A six-day working week was then in operation and wages were paid fortnightly. In 1801 a nine-hour day was customary, although when necessary work was limited to eight hours and three shifts were worked to maintain continuous production. At one pit a daily output of 20 waggons from a depth of 100 fathoms required eight hewers, two women to fill the baskets, eight boys to drive the horses to the bottom of the pit, a female hooker to hook the full basket to the winding rope and to remove the empty basket, a man at the surface to empty the baskets and two boys to drive the gin horses.[57]

Many women were employed in the Cumberland pits as hookers, fillers, horse drivers, and in clearing the roads underground. Children were also employed, directly by the colliery owner at Whitehaven and by miners in other Cumberland collieries, from the age of five as trappers and to carry lights for the men. One visitor to Whitehaven during the Napoleonic War was horrified by the employment underground of women and children and he wrote, " The people in the mines are looked upon as mere machinery, of no worth or importance beyond their horse power. The strength of a man is required in excavating the workings, women can drive the horses, and children can open the doors; and a child or woman is sacrificed, where a man is not required, as a matter of economy, that makes not the smallest account of human life in its calculations ".[58] Inevitably illiteracy and immorality were common and the mining villages housed some barbarous people.

Frequent accidents added to the rigours of mining and they aroused little comment in local newspapers. These resulted from the use of naked lights which ignited gas and caused disastrous explosions, from falls of roof, and from the carelessness of the men themselves. It was a great shock to John Bateman to find that when a woman hooker at Wilson Pit had been killed by a piece of stone falling down the shaft from the pit top, the coroner deemed it necessary to summon a jury to enquire into the cause of her death. He described this as " *a thing never practised here in my memory*, such enquiry being supposed only calculated to frighten the ignorant & discourage them from going into the Pits; on this account the workmen were always forbid to even talk abt any accidents which had happened in the Pits; your Lordship can judge better than me how far it may be proper to *check this new Practice* ".[59] It was customary to allow the widow of a man killed in a pit accident to have a free house and free coal and some financial assistance from a fund established for that purpose. Injured men who were unable to return to their former work were given jobs that might be done by boys, such as furnace keeping or trapping, in order that they might earn something.

For the Whitehaven Colliery, despite the frustrations and shortages inseparable from war, the Napoleonic era proved to be a period of expansion and experiment. Output and profits increased and the miners earned steadily rising wages which helped to compensate for the dangers and discomfort of their work. Whitehaven coal continued to dominate the Dublin market and mining technique employed in this Cumbrian colliery remained among the most advanced in the country. Most of the credit for this must be attributed to John Bateman whose energy and pertinacity redeemed the mistakes of his predecessor and who, although he lacked the inventive genius of Carlisle Spedding, showed himself ever ready to adopt new methods.

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Relative Prices, Expenditure and the Trade Balance: A Note

By A. C. L. Day

Recent discussion has attempted to fill a gap in the theory of consumption. The question is, what will be the effect of a change in relative prices on aggregate consumption from a given income? Ackley and Suits[1] have asked whether the effect of a change in consumers' real income arising from a change in relative prices will be the same as the effects arising from the corresponding change in real income when relative prices are unchanged. A very important practical example of a shift in relative prices is the shift in the relationship between the prices of home and of imported goods when the exchange rate is changed or when there is a change in the general price level at home or abroad. Laursen and Metzler[2] and Harberger[3] have considered the effects of changes of the terms of trade upon the total of expenditure from a given money income, and so on the level of activity and on the conditions for exchange stability.

Two major problems are involved in this question. Firstly, there is the index number problem. Secondly, we have to ask whether a rise in one price will affect the real consumption function in the same way as some corresponding lesser rise in all prices. In Hicksian terms, we have three "commodities" on which the individual can spend money; good x, good y, and saving. Now it may be that a relationship of close complementarity or of close substitution exists between one of the goods (x or y) and saving. The main purpose of this paper is to consider when we might expect such relationships to arise, and to investigate their implications.

It is all too easy, in this discussion, to fall into the trap involved in the index number problem. If we compare two situations, one before relative price changes and one after, we cannot measure the price index which is the ratio of the " compensating " income to the initial income, but can only say that it approximates to one limit or the other; that is, to the Paasche or to the Laspeyres type of index. We cannot say that a rise in some prices but not in all corresponds to a uniquely defined fall in income[4].

In order to avoid the index number problem, this paper will consider a case where some prices rise and other prices remain unchanged, and where each consumer's money income is initially unchanged. (This can be conceived of as a sort of period analysis. Consumer expenditure depends on income from the last period and upon current prices.) Can we assume that consumption expenditure will be the same proportion of money income as it would be if all prices had risen by some uniform proportion which lies within the range whose limits are the Paasche and the Laspeyres price indices ? Can we even assume that consumption expenditure will move in the same direction as it would if all prices had moved in some such constant proportion ? If we ignore money illusion and speculation, we can assume that the normal effect of a uniform proportional rise in all prices while money incomes remain unchanged is to increase the proportion of money incomes that is spent. In other words, we can assume that there is a constant term in a linear consumption function. But can we safely assume that the effect of a rise in some prices, while other prices remain unchanged, will be to increase total consumption expenditure from a given money income ? We can answer this question by considering the case of a devaluation, as considered by Laursen and Metzler and by Harberger. Let us consider a two-country world, in which the elasticity of supply of the single good produced in each country is infinite, where trade is initially balanced, and where the sum of the price elasticity of demand for home goods by foreigners and of the home price elasticity of demand for foreign goods is equal to unity. One country B devalues its currency in relation to A. The immediate effect is that A will demand more of B goods and B will demand less of A goods except in the limiting case where one of the elasticities is zero. Trade will continue to be balanced. The question arises, what will be the effect on A's demand for her own home produced goods, and on B's demand for her home produced goods ? Will A's expenditure in terms of her own currency from a fixed money income in terms of her own currency change by just the same amount as does her expenditure on B goods, so that total expenditure by A from a fixed money income will remain unchanged ? And similarly for B ? Or, to put the same question in another way, will total expenditure from a given money income be independent of the terms of trade ? That is, will the total demand for the products of each country remain unchanged ?

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[1] *American Economic Review*, 1950, p. 285 *et seq.*

[2] *Review of Economics and Statistics*, 1950, p. 28 *et seq.*

[3] *Journal of Political Economy*, 1950, p. 47 *et seq.*

[4] See R. G. D. Allen, *Economic Journal*, 1950, pp. 675-686.

The type of case with which we are concerned is the case which Harberger calls a " normal Keynesian model ". If we assume that in each country the marginal propensity to consume in terms of real income (i.e. taking account of the effects of changes in the terms of trade on real consumers' income) is less than the average propensity to consume, and if investment is fixed in terms of money, then there will be an inflationary pressure in B and a deflationary pressure in A. The induced effects on imports will cause the trade balance to move against B.[1] It follows that the sum of the elasticities which would just leave trade balanced will be greater than unity, and Harberger shows that the initial value is $(1 + c_1 + c_2)$ where trade is initially balanced (c_1 and c_2 being the marginal propensities to import into the two countries).

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[1] As Harberger shows in his appendix, it is not necessary to assume that the total demand for a country's good is a decreasing function of the relative price of that good, because Hicksian income effects are present. This summary follows the assumptions of Harberger's text, however.

This conclusion of Harberger's, however, does not answer the question we asked at the beginning of this paper. Is the effect of the rise of some prices when others are unchanged necessarily even in the same direction as that of a rise in all prices ? An analysis of the nature of and the motives for consumption suggests that the effect is not necessarily even in the same direction. " Consumption ", as defined by the statistics of National Income and as used in aggregative analysis includes a great deal of amassing of consumer durable goods. Part of consumption expenditure consists of consumption pure and simple, in the narrow sense that it does not result in the building up or maintenance of assets. But a very considerable part of consumers' expenditure is upon the building up of assets of durable goods. A still larger part of consumption expenditure is concerned with durable goods if we include expenditure on maintaining consumers' capital intact. In fact, in quite a reasonable sense, the greater part of consumer expenditure is so used, in maintaining health and efficiency of the body and mind. We need not look at the matter so broadly, however. For our purposes, the broad distinction between expenditure on current consumption and expenditure on building up assets in the form of durable consumers' goods is sufficient.

The theory of consumers' behaviour needs to take more account of this fact that a large part of consumption is spent on assets. What is needed is a theory of the accumulation of assets by consumers. Here it is only possible to indicate certain aspects of such a theory. Assets include money, bonds, securities, and durable consumer goods. Income can be spent either on current consumption, or on the building up or maintenance of assets. Why should an individual want to build up assets ? If he is isolated and we can ignore social effects, we can distinguish three groups of reason. First, he may wish to enjoy the continuous flow of income which derives from the possession of an asset. This income may be in the form of a fixed or a varying sum of money, or in convenience of some sort or other (including the convenience of liquidity for the transactions motive). An asset will usually provide some measure of this last sort of income, and often some of the first sort. Secondly, an individual may purchase assets with a possible intention of reselling them in the future. The best known example is money for the purpose of liquidity in the narrower sense. More generally, however, whenever an asset may be sold in the future, or whenever its purchase may be delayed, if the individual has a view about its future price, this view will affect his action in deciding whether or not to hold the asset now. Thirdly, an asset may be purchased in order to consume it in the future.

If the price of one asset in terms of a *numéraire* changes, and the price of all other goods remains unchanged, the reaction of individuals will be complicated even if we assume that elasticities of expectation are equal to unity. We can distinguish two groups of effect:—

(1) Individuals will tend to redistribute their holdings of assets so that they come back to an equilibrium at which they have no desire to exchange a marginal unit of one asset for an additional unit of the other. These might be described as " stock " effects ; they can be conceived of as affecting immediately the desired distribution of an individual's holding of property between different assets. Two influences are at work deciding what is this new desired asset structure :—

(a) The change in the individual's valuation of the total of his assets. (We might call these " wealth " effects.)

(b) Changes in the relative prices of the different assets.

(2) The second group of effects is that which occurs as new income flows in; it can be considered as a " flow " effect. Further assets will be accumulated, and more generally goods in general will be purchased at rates different from those which would have existed if prices had not changed. Here again there are two groups of influence at work :—

(a) Income effects as in the ordinary Hicksian analysis for consumer goods.

(b) Hicksian price effects.

Relaxation of the assumption of unit elasticities of expectation increases the complication of the position.

Fortunately the main conclusion we wish to draw is a negative one. It is, that we cannot be sure what will be the effect of a rise in the price of one asset on the demand for other assets, or for current consumption goods, when other prices remain unchanged. Similarly, if the prices of all assets remain unchanged and the price of goods required for current consumption changes, we cannot be sure that purchases of any particular form of asset will move in any particular direction.

Let us imagine an individual who uses a fixed money income for buying bread, bonds and furniture. Let us assume that he does not speculate, and that his average holding of money does not change. Now let the price of furniture rise and all else remain unchanged. We cannot be sure whether his subsequent purchases of bonds out of subsequent weeks' income will be greater or less than they would have been. A normal income effect will make him buy less bonds. Wealth effects may work either way. As for price effects, if furniture and bonds are sufficiently close substitutes, the net effect may be to make the individual buy more bonds.

Nor is such a possibility an unreasonable one. If the price of furniture rises, it is by no means irrational to buy a claim to a future payment of so many pounds a year instead of buying a claim to the convenience of having another chair to sit in for the next few years, which latter claim would have been bought if the price of furniture had remained unchanged. It is impossible to say with certainty what will be the effects on the purchase of bonds. But it is certain that we cannot exclude the possibility that bond purchases may rise simply because we use a portmanteau work " consumption " which includes the building up of some, but not all, private assets. A fall in real consumer income which results from a rise in the price of some assets in relation to other prices does not necessarily have the same effect on saving as that resulting from a fall in real consumer income when relative prices are unchanged.

So far we have been assuming that investment is fixed in money terms. The other simple possibility is that investment (by firms) is fixed in real terms. In that case, unless all investment is in home produced goods, the money value of investment rises after devaluation, and there is expansionary pressure in the country against whom the terms of trade have turned.

If investment depends on the rate of return to investment in relation to the rate of interest, and if the national output has not changed in total or in composition, then since the cost of investment goods has risen in relation to the rate of interest (unless all investment goods are home produced), we might expect real investment to be less than it was before, and perhaps money investment also. The price of and demand for finished products and the rate of interest are unchanged, and the cost of investment goods has risen. A fall in money investment is by no means unlikely.

We can continue to add complications, to little profit. The important point is that it is by no means impossible that money investment by firms may fall ; just as we found that it was by no means impossible or unlikely that money consumption may fall in the devaluing country. Statistical demonstration that the marginal propensity to consume is less than the average over cyclical fluctuations does not give us adequate reason for believing that the internal effects of an adverse shift in the terms of trade (i.e. where the balance of trade is not considered and where we also ignore foreign repercussions), will necessarily be expansionary.

The implications of this argument can easily be applied to Harberger's model. In the case where trade is initially balanced, the critical sum of the import demand elasticities becomes :

$$1 + c_1 (1 + q_1) + c_2 (1 + q_2)$$

where q_1, q_2 represent the reaction of total expenditure to a relative rise in import prices in each country, given the levels of consumers' real income, and where c_1, c_2 are the marginal propensities to import.

The reaction of total expenditure to a relative rise in import prices, q, consists of the substitution term in the elasticity of total expenditure to changes in total prices, divided by the product of the marginal propensity to hoard and the initial average propensity to import. Harberger's formula is seen to be a special case, where q_1 and q_2 are both zero.

The practical importance of this further generalisation of the theory of exchange stability depends to some extent on empirical evidence which is not available. The main purpose of this note is, in fact, to point out circumstances where analogies should not be taken too easily and where we should not allow categories to become our masters.[1] Nevertheless, something can be said *a priori*. To the extent that tastes are similar in the two countries, the responses of total expenditure to a relative rise in import prices are likely to be opposite in sign, because the imports of one country are the home goods of the other. To the extent that the q's are opposite in sign and more or less equal in magnitude, there will only be a strong effect on the critical sum of the elasticities if the marginal propensities to consume are markedly different in the two countries. If in such a case the country with a positive response of total expenditure to a relative rise in import prices has a larger marginal propensity to import than the other country, the critical sum of the elasticities will become appreciably larger than under the Harberger formula. Since the q's depend partly on the initial average propensity to import, and q is larger the smaller is the average propensity to import, it follows that, if other things are equal, the critical sum of the elasticities will be larger if the country with the positive response in expenditure to the rise in import prices has a smaller average propensity to import and a larger marginal propensity to import than the other country ; the critical sum will be the smaller if the reverse tends to be the case. As for the size of the q's, it seems unlikely that they will exceed unity. As an extreme case, one can assume that, at any level of real income, any change in expenditure on imports in one country goes to or comes from saving. Even in such extreme assumptions, q would be of the order of magnitude of the substitution effect part of the import elasticity, divided by the marginal propensity to hoard, and might not exceed unity. Since it is also likely that the two q's will be opposite in sign it is very unlikely that the critical sum of the elasticities will fall below unity in the case where trade is initially balanced. On the other hand, circumstances may arise where the sum will be appreciably greater than unity.

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[1] The relevance of the argument and conclusions to one of Johnson's criticisms (in " The Taxonomic Approach to Economic Policy ", *Economic Journal*, 1951) of Meade's *Theory of International Economic Policy*, Volume I, will be apparent. Johnson argues that there is no economic justification for assuming that the effect of import prices on domestic expenditure will be nil. This view, based on Harberger's article, is justified, but it is not justifiable to continue by stating that an improvement in the terms of trade must result in greater domestic expenditure, because real income is higher. Formally, Meade is more correct in stating (" Mathematical Supplement " to Volume I, p. 16) that " there is no *a priori* reason to believe that a fall in the price of any one commodity will cause the total expenditure on that commodity to go up or down or, if it does go up or down, whether the increased or decreased expenditure on this commodity will come solely from expenditure on other commodities or partially from savings or increased borrowings of new funds ". Whether it is a justifiable simplification to regard the terms of trade effect on domestic expenditure as zero remains an open question; the problem which perpetually faces the constructor of economic models is the reconciliation of manageable simplicity with reasonable approximation to possible real conditions.

Book Reviews

The Growth and Fluctuation of the British Economy, 1790–1850. By A. D. Gayer, W. W. Rostow and A. J. Schwartz. Oxford: Clarendon Press. 1953. 2 vols. xxxvi + xii + 1028 pp. 84s.

The Process of Economic Growth. By W. W. Rostow. Oxford: Clarendon Press. 1953. vii + 282 pp. 25s.

The late Arthur Gayer was impressed as a doctoral student in Oxford by the extent of the statistical materials for the study of the British economy in the early nineteenth century, and when later he was teaching at Barnard College in Columbia he organised a comprehensive inquiry into them, of which the first of these works is the abundant harvest. The materials—thanks to those who have sought and found them—have indeed proved plentiful: around two hundred series, all at least annual and not a few of them monthly, were extracted. By the patient and detailed study of this evidence has been built up a narrative and argument which attains authority by its very humility before the facts. British economists owe to Arthur Gayer and his team, and the Columbia Council for Research in the Social Sciences which supported them, a masterly study of the upsurge of the British economy.

It is important to record that the forbidding bulk of these two volumes contains within it a study of economic growth and fluctuation which is as readable as it is scholarly and stimulating. The other components, it is true, are extensive. A third of the first volume is occupied by detailed description of new indexes of share prices, 1811–50, and their institutional setting, and three new monthly indexes of commodity prices, 1790–1850—domestic commodities; imports; and the two combined. These are important materials, and their full presentation is well warranted. But much of the account of the price indexes, and two-thirds of the whole second volume, are made up of the detailed description of cyclical patterns in the various series, as those are revealed by the methods of the National Bureau. It is always an awkward matter of judgment, how much to present of the working up and analysis of materials, through which the final generalizations have been reached. What has been done here is to describe at length the specific cycles and reference cycles of the series, but leave these series themselves merely listed as available in microfilm. I wish it had been the other way round: for the account of the cyclical patterns can hardly of its nature be readable, nor does it in practice provide the means of checking the conclusions against the evidence—there is every ground for confidence here that the results of the particular drill followed have been used faithfully, and any fresh approach is likely to want to begin again with the original series. But these things apart, there remains the Part I of each volume; a year-by-year history of business cycles from 1790 to 1850, and a general analysis of the forces at work in those cycles and in the secular trends running through them. Together they make up a unified and compelling study of economic growth and fluctuation. Both are the work of Dr. Rostow; they develop and confirm the views already expounded in his *British Economy of the Nineteenth Century.*

He divides the cycles into major and minor. The mainspring of the minor cycle was a fluctuation of inventories, mostly in the export trade: this is of fresh interest to us to-day, when (if fixed investment continues to be sustained) the inventory cycle looks like showing its independent vitality again. The major cycle, of about nine years, was marked by the concentration, in the later part of its rise, of the launching of schemes of long-period investment. The influence of home investment on the major cycle increased after 1825; in the earlier years this cycle depended more on its second mainspring, the export demand for textiles, the revival of which was at all times likely to bring in the early stage of revival. This last impact sets the cycle in its context of insistent economic growth; and Dr. Rostow also treats the fluctuations of home investment as a jerky adjustment of capacity to the trend of a growing market. He shows why the jerkiness was natural for any one firm, and why different firms tended to move and wait together.

The main difference beween the secular trends of 1790–1815 and 1815–48, a difference marked by the drift of change in prices, Dr. Rostow finds in the prevailing character of investment. When that is directed to objects which, like the opening up of new territories, do little to increase the supply of produce in the short run, or which, like war, do not increase it at all, then the rise in the total output of produce is less than that of a total effective demand which (I think Dr. Rostow assumes) goes on rising according to a law of growth of its own; the consequence is an upward trend of product prices. When, on the contrary, investment predominantly takes such forms as the extension of factories, or the building of railways between established centres of industry, which increase the outflow of produce promptly, the balance of MV and T inclines to the other side. There is little doubt that the type of investment contains an essential clue to the problem of secular trends. But a constraint which Dr. Rostow himself is at pains to emphasize is the lack of any systematic difference (save for the growing importance of home investment) between the business cycles lying within the two sorts of trend. Probably Dr. Rostow would agree that the problem remains largely unsolved, for his own treatment consists mostly of a careful examination of alternative solutions. His handling here of Schumpeter is a masterly example of the patient testing of an imaginative generalization against the facts.

These two Parts, so thorough, careful and yet questioning and stimulating, constitute a major contribution to the study both of British economic history and of economic fluctuations.

So far we have been moving within the usual bounds of the economist. But *The Process of Economic Growth* springs from Dr. Rostow's sense of the importance to the actual course of growth of those social and political factors which the economist usually takes as given. We have to find some way of grappling with them, he argues, be it only to provide a sufficient explanation of properly economic changes: we are bound to broach such questions as, why are some societies traditional and others innovating? Why is population sometimes stationary or declining, sometimes expansive? How far are changes in moral and political ideas the cause, and how far the consequence, of economic changes? And the same sort of question is forced on us when we tackle contemporary problems. Perhaps the monetary disequilibrium and the trade cycle of the inter-war years could be prescribed for within a social framework which was taken as given; but the crux of most of the economic problems of the world since 1945 has so often lain in social and political factors, and could not be grasped so long as these were brought in only as afterthoughts. " It is an old story in the history of economic thought that the variables assumed as fixed or given, for purposes of formal exposition or convenience, tend to disappear from consideration among the objects of policy ".

But social and political forces are factors with which the economist himself is not specially qualified to deal. What then can he do? Dr. Rostow's solution is to select the points at which actions influenced by these forces bring about changes in the effective stock of capital and the working force, and at each of these points to postulate a propensity. The three main propensities are to seek material advance, to consume, and to have children; the first of these covers further propensities to develop fundamental science, to apply science to economic ends, and to accept innovations. Such are the smallest packages of social and economic forces with which we can complete an explanation of the rate of economic growth. So viewed, they are links between economics and other social sciences, giving the economist the essentials he must borrow from them, and posing to them the questions he most wants them to answer. Economic growth depends on the interplay between the propensities and certain current yields: Dr. Rostow treats the economic expansion of England in the 1780's as a response of relatively stable propensities to a sharp rise in prospective yields, through Arkwright's invention, and the renewal of trade with the Southern States; and that of Japan after 1868 as due to a shift in the propensities, brought about by a political upheaval.

Dr. Rostow's work as an economic historian has been so thoughtful and learned, that the way his mind inclines in these matters deserves our closest attention; yet at the end of much study I still do not understand why he has felt compelled to wrestle with these propensities—and to wrestle so darkly: for what are they? " They must be distinguished firmly from the decisions of a society which they help determine ", but they " reflect the actual performance of societies rather than merely the psychic inclinations in individuals or in the social group regarded as an aggregate ". They are sometimes called variables, and sometimes parameters; but they are also said variously to show, define, indicate, reflect, and be related to functional relations between income and a dependent variable, or better, supply curves showing the quantities of a certain resource that will be provided in response to a range of prospective yields, at a given level of income—" thus, with a given level of income, the volume of resources devoted to fundamental science would be determined by the intersection of two curves: a downward-sloping curve, reflecting, let us say, diminishing yield from additional increments of investment in pure science, and an upward-sloping curve, exhibiting allocation of resources to science with a rise in expected yields ". What use are they? They are not apt materials, Dr. Rostow points out, for " extended abstract elaboration " by the economist. Neither, as he himself also stresses, are they necessarily apt materials for the sociologist: having been singled out according to the points at which forces impinge from without upon the economic process, they do not necessarily provide the kind of unit with which the sociologist can work. Nor are they ultimate causes to which we can trace economic changes back: on the contrary, " the strength of the propensities and their course of change are determined by a complex inter-relationship among the economic, social and political forces of a society "; to understand them we must study history.

In fact, Dr. Rostow makes next to no use of the propensities himself. In the chapters which follow, he attacks the problem of the relations of economic growth with business cycles and secular trends, and adds an Oxford lecture on war and economic change, two papers on the terms of trade reprinted from the *Economic History Review*, and an essay on economic theory and public policy. These are unified by the thought that the economic processes cannot be understood apart from the social, but save for the courtesy of a verbal reference the whole body of discourse is independent of the propensities.

Yet I hope that readers who find the opening pages unprofitable will not on that account miss the chapters which treat business cycles and secular trends in their organic connexion with the processes of growth. Away from the propensities, Dr. Rostow steps out again with his accustomed firm and steady stride. His present Chapters V and VI are to be noted as convenient extensions and digests of the important argument first developed in his *British Economy of the Nineteenth Century.*

E. H. PHELPS BROWN.

Power and Influence. By LORD BEVERIDGE. Hodder & Stoughton Ltd. 1953. xi + 448 pp. 30s.

Lord Beveridge has had a very active, varied and useful life, fully warranting an autobiography. May-be a long 400 close-packed pages, to be followed shortly by a companion volume on the same subject by his wife, is a trifle over-generous. The author describes and laughs at his addiction to multitudinous words in his early letters to his mother. He laughs at this addiction but has not yet cured it. It is a pity that he kept *and used* such a mass of documentary material. There is nothing here of the clear-cut artistry of Mill's autobiography. This is a pardonable grouse from an impatient—and virtuous—reviewer! But the ordinary reader is more free to skip. He is not obliged to consume the whole of all the dishes that are offered for his delectation.

The author starts his story after he had taken his degree at Oxford. His main interest was " the causes and cure of poverty ". But he had also to earn a living. Aided by a prize Fellowship at University College, he started work for the Bar. But this did not satisfy him. Success would have been little better than failure ; for it would have kept him too busy to find the time for work at what really interested him. In April 1903 he became sub-warden of Toynbee Hall under Canon Barnett at a small salary, helped with the children's country holiday fund, attended the offices of the Charity Organisation Society, took part in innumerable meetings and—a great thing in his life—made contact with the Webbs.

After a while, the problem of earning a living was simplified in a way very congenial to him. He was only occupied at it for some ten or eleven hours a week and had the rest of his time free, in 1905. Resigning from the sub-wardenship, he became, under the auspices of Fabian Ware, a writer of leading articles in the *Morning Post*. In that highly conservative paper he, a radically-minded person, was not allowed to touch on party politics. But in his own field, unemployment and social problems generally, he was free to write what he pleased. This suited him admirably. He was, however, also on tap for other things. " In April 1907 all America became my province and I was the paper's authority also on France. Beyond this I dealt at need with subjects as variegated as the San Francisco earthquake, the Eisteddfod, vivisection, the progress of astronomy, juvenile smoking, musical copyright, the South African War Stores scandal, Keats and Shelley memorials, the coronation of King Haakon, reform of the ancient universities and the channel tunnel." About this last subject " of which I am colossally ignorant, . . . I wrote about three quarters of one column in just over the hour " (p. 42). Let this be a warning to those who take their opinions from newspapers !

Meanwhile he was working out his ideas about labour problems, getting practical experience on the central unemployed body for London and visiting Germany to study their system of social insurance—activities which led up to his accepting in 1908 the post of Director of Labour Exchanges at the Board of Trade. He thus came to preside over the actual working of one of his own pet projects and also to take part in the beginnings of compulsory insurance against unemployment. This, along with the publication of his path-breaking book, *Unemployment a Problem of Industry*, was his principal occupation until the 1914 war began.

In Chapter V he breaks off his story with an account of his diversions. He liked physical activity both for its own sake and as a means of mental relaxation. He was very fond of hills, chiefly ridge walking. Rock-climbing might, he thought, have been a still better sedative " because, if I had gone rock climbing, I could not have thought about anything but how to keep alive, and I could not have gone on talking " (p. 46). I commend this passage to my fellow members of the Alpine Club. In the pursuit of our favourite recreation were we really as miserable as all that ? Besides physical exercise he also indulged in a variety of social activities and amusing forms of ' nonsense '; for " those who seek to influence their fellows are more likely to influence them soundly if they are kept sound themselves by healing nonsense " (p. 6).

Book II of the autobiography is entitled " Through World War One and its Aftermath of Illusions ". The first chapter gives an account of the author's work at the Board of Trade and on the Munitions of War Committee. The second deals with the Ministry of Food, where he was notably successful. Here there is an interesting account of the contrasted methods and attitudes towards Civil Servants of Lord Rhondda and Lloyd George

Then comes Chapter VIII, ' London School of Economics Remade ': " I became Director of the London School of Economics and Political Science in the University of London on October 1st, 1919. I remained Director for eighteen years taking me from the age of forty to the age of fifty-eight. They were years of great and varied activity ". They coincided with a great development of the School. It changed " from being a small institution of part-time teachers and adult students to being a large institution of teachers, mainly full time, and students mainly of ordinary undergraduate age " (p. 167). This chapter is followed by one on ' The Bloomsbury Site and its Rescue ', in which an account is given of the complications of the battle, of American munificence, of Beveridge as Vice-Chancellor (1926-8) and of the eventual housing of London University on the site and with buildings worthy of it. No one now, when asked to drive to its seat of Government, would say, as a cab-driver did to Beveridge in his early days; " Oh you mean the place near the Royal School of Needlework ! " (p. 85). The ' Side Shows of a Director ' included membership of Samuel's Royal Commission on the coal industry, broadcasting and chairmanship of the Unemployment Insurance Statutory Committee from 1934 to 1944.

Book V is entitled " Through World War II and its Aftermath of Defeat ". In May 1937 Beveridge was elected Master of University College, Oxford, and a new and exciting life began. Alas, it did not continue long ; for the second war was at hand. In spite of his first-war experience, in this war he was only in the government machine for a few months at a time for special jobs. None the less, there came to him now his great opportunity. A committee was appointed by Mr. Arthur Greenwood, Minister without portfolio, to undertake a survey of existing national schemes of Social Insurance and allied services and to make recommendations. Beveridge was appointed Chairman of the committee and presently, since his colleagues were all Civil Servants who might not commit themselves on policy, they were turned into assessors, with Beveridge alone responsible for and signing the Report. This decision was taken on January 27th, 1942. In Chapter XIV he tells of how the Committee worked and how the report was made. It was laid on the table of the House of Commons at 3 o'clock on December 1st, 1942—truly a miracle of speed. " Making the Beveridge report was continuous and undiluted delight, for it brought continuous companionship with a picked group of men and women without power but seeking to make a better world by influence based on knowledge. When the Report had been made it passed from such people into the hands of men exercising or seeking political power. This proved to be a different and less pleasing world " (p. 318).

The Report had an immediate and resounding popular success. But the Government, absorbed in a terrible war, was disinclined to commit itself hurriedly to implementing so large a scheme. Hence friction and a sense of grievance. Characteristically Beveridge switched over to a new enterprise, Full Employment in a Free Society, with a new set of helpers. This time they were all unofficial. For the Treasury, on instructions from the Chancellor of the Exchequer, issued an order to all Government Departments telling them to have nothing to do with Beveridge about maintenance of employment. In a chapter headed 'Beveridge Boom and Boycott' the author makes no secret of his resentment about this. But the advertisement and publicity with which he surrounded himself, his setting up special offices and constituting himself in effect a sort of private Royal Commissioner, might well suggest to authority that popularity had turned his head and, in a measure, justified the boycott. He himself, as it seems to me, was in large part to blame for this most unfortunate rift. Beveridge had tact with subordinates but not with superiors. Keynes, the wiser man, was equally tactful with both. It is pleasant to recall that in 1949 he once more served Government—a new Government—as Chairman of the Broadcasting Committee to advise on the British Broadcasting Corporation before a new charter was granted. The committee worked harmoniously and issued a report with only one dissentient on the major matter. But here again came friction and a sense of grievance; " no word was said to me and no question was asked of me about the Report by either of the two governments that considered it in turn " (p. 356). *Sunt lacrimae rerum* !

I have never reviewed an autobiography before and I did not realise that this entailed, at all events when the subject is an elderly man, composing a sort of premature obituary notice. That is an unpleasant thing to do and I am so far sorry that I accepted the Editor's invitation. However " a promise is a promise " and one must not shirk. Beveridge then in my view, as a writer on economic subjects, is not infallible. For example, he had a curious lapse when he claimed to have " discovered "—in 1938—that " the trade cycle had its origin in agriculture rather than in finance " (p. 260). Jevons would have been amused at this ! More serious is the remarkable dichotomy—backed by a reference to Einstein in which the special and the general theories of relativity are jumbled up together—by which he divides economists into two groups, those who rely respectively on ' observation ' and on ' analysis of concepts ', Keynes being put, in respect of his most important work, in the latter group. This, to use a phrase dear to Keynes himself, is just " silly ". Beveridge would have done well to keep off the much trampled field of methodology. As against his deficiences he has, on the other side, four very important claims on our admiration. First, he went out into the world and made contacts with reality. This gives vividness, proportion and perspective to his approach which those of us who live in ivory towers sadly lack. We, but not he, are like people who write about mountains from book knowledge without ever having climbed one ! Secondly, he did fine work as an administrator, alike in government offices and in the London School of Economics and the University of London. Thirdly, he showed great skill and persistence in devising schemes on a large scale that would work successfully in practice; witness his work in developing Labour Exchanges and on rationing at the Ministry of Food. Finally he was extremely successful in organising and leading teams of experts in co-operative work; witness, among other enterprises the *Beveridge Report* and *Full Employment in a Free Society*. Always he made full and generous acknowledgment of his debt to official and unofficial helpers. He often met with frustration and friction, due partly to external accidents, partly to his own temperament. But he never let these things get him down. As he wrote in his farewell address to undergraduates in University College, " What I planned to do in life has again and again been prevented by events beyond my control, yet on each occasion I found something else worth doing ". He " never turned his back, but marched breast forward, never doubted clouds would break ".

Here I may fitly end this pseudo-obituary notice—with all possible emphasis on the pseudo. Everybody, not least the present writer, will hope for Lord Beveridge many years yet of happy and many-worded activities. He and his wife with him may, and should, take pleasure in knowing that, outstanding among his contemporaries, he has exercised over a wide field that ' influence ' which he preferred to ' power ', and in so doing has rendered sterling service.

A. C. PIGOU.

History of the Second World War: Civil Industry and Trade. By E. L. HARGREAVES AND M. M. GOWING. H.M. Stationery Office and Longmans, Green & Co. 1952. xii + 678 pp. 37s. 6d.

This book contains a great deal of very interesting material about the " civil " side of the British war economy, and one is bound to admire the way in which the authors have struggled with many difficulties to produce it. The assignment which the Editor had given them was, however, such that a really satisfying product was virtually impossible, as he duly admits in a Preface; and a reviewer can perhaps most usefully devote most of his space to certain general points which the reader should remember when using the book—more especially if he takes a short cut past the first 625 pages to the " summing up " in the final chapter.

The basic difficulty is that the subject matter sprawls over a vast field, without any logical boundaries in terms of industries, or purchasers, or problems. In effect it conforms most nearly to the war-time work of the Board of Trade, with some omissions (e.g.; company registrations, etc., and trading with the enemy) and some extensions into the field of other Departments where this seemed necessary to the treatment of what the editor regarded as the main unifying problem—" how to release resources for the war effort and at the same time to ensure to the civilian population an essential minimum of consumption goods, with fair shares for all ".

This approach *via* the work of a single Government Department simplified the historians' physical task, even though that Department had twelve million registered files. But it raised difficulties, which the authors do not fully bring out, through the varying nature of that Department's responsibilities. For some purposes the Board of Trade was " responsible " for a certain range of *industries*, and so had to pay heed to the output required from them for all purposes—home civil, export, Government, " common user ", etc.—as well as to the reasonable claims of the " industry " as such (including its post-war welfare). For other purposes the Board was only a claimant for part of the supplies which could be obtained from an industry or from imports: the claim was usually on behalf of exports and the general run of home consumers (i.e. those who did not, like hospitals, come under one of the more specific Departments) and it was sometimes a large one, but it did not make the Board responsible for the industry. In yet other matters the Board was responsible for the whole of a " problem " or " aspect of policy ", over the entire field of industry—as when it was operating the control of factory space, or general export policy.

As a result of all this, " Civil Industry and Trade " is a title which keeps changing its meaning and is never really accurate. Sometimes it seems to mean " supplies for (home) civilians " as the quotation from the editor's preface would imply: but here the Board of Trade covered only a limited part of the field, omitting such essentials as food, fuel, housing and transport, and the authors even excluded part of the field which the Board did cover, such as tobacco and matches. (Incidentally these omissions are very regrettable. The contrast between the arrangements made about distribution for these commodities and others would have been very instructive, and so would a discussion of the great efforts to *raise* tobacco supplies above the pre-war level.) Consideration of such a restricted and far from typical part of the field does not really provide a basis for the statistics in the final chapter about the contribution to the war effort through reduced personal consumption, which relate to the *total*, not to the " Board of Trade categories ". On the other hand, " civil industry and trade " sometimes seems to mean " production and distribution of non-munitions "—an approach from *industries*, rather than the end-user—but again the Board (and the book) cover only a part of the field. And at other times its meaning is simply " something the Board of Trade did ".

In these circumstances the nature and comprehensiveness of the authors' discussion inevitably vary greatly from topic to topic, and the reader is not given adequate warning of the changes. Indeed, it is clear that in places the authors have not really appreciated the nature of the problem themselves.

Thus in Chapter XVIII, entitled Civilian Footwear, they describe the concentration scheme without the slightest reference to production for Service requirements. Yet further on in the chapter they are clearly aware that civilian and service footwear were not made in self-contained industries (cf. p. 491, " No factory was entirely engaged in making service footwear "); but they do not infer that the percentage cuts to be made in the various types of civilian footwear gave a quite inadequate basis for working out a concentration scheme, either for the total reduction in capacity or its allocation by types. Similarly they do not show the important repercussions on civilian supplies of the great variations in output for the Services, for which they give no statistics. This unsatisfactory treatment of the Service-civilian interaction is in marked contrast to the prominence which it rightly receives in the chapter on the clothing industry, written by a different author, and the editor might well have spotted the mistake.

The book would have been much improved by an initial chapter analysing the difference between an " industry " approach and a " consumer " approach, and showing why some measures inevitably followed one line (e.g. concentration, labour withdrawals, factory control) and some the other (e.g. consumer rationing, special supplies for the victims of bombing). Either there or in the final summing-up the point should have been driven right home that the administrator was necessarily, time and time again, trying to do the impossible, to reconcile the irreconcilable. Above all, he was haunted by the rapidity and unpredictability of changes in the situation, and the complicated nature of their repercussions, at a time when the general stringency of resources made it impossible to hold large reserves of any kind to ensure " flexibility ". It was not only requirements which might change violently (either in the civilian sphere with the advent of flying bombs, or for exports with Lend-Lease, or for the Services with a " Portal cut "); a crucial material might suddenly become scarce and so render a whole set of utility specifications and prices useless, or the labour situation in a given area might change almost overnight from scarlet to green and render inappropriate the basic assumption of a concentration scheme. Yet action had to be taken, often of a kind which would be difficult to reverse. (Cf. p. 407, " Clothing production could hardly be uprooted every few months to keep pace with changing labour conditions ".) Mistakes were inevitable, and courageous decision-taking essential; only in this way could the jobs get done. Perhaps the same should be said of the production of this book, and we should certainly be grateful to the authors for having attempted the impossible and achieved a result which is vastly better than nothing.

W. B. REDDAWAY.

Business Finance. By F. W. PAISH. Pitman. 1953. vii + 144 pp. 12s. 6d.

This scholarly little book should henceforth appear on the reading list of any British student intending to study economics seriously, whether at university or elsewhere. For though elementary in its approach it is unique in the highly important field it covers: indeed, many professional economists who read it will undoubtedly be shocked to discover how much of what Professor Paish has to say is new to them.

The object of the book is " to explain some of the more elementary principles and practices of business finance in Britain ". Under the heading of principles, Professor Paish considers such concepts as risk, limited liability, gearing, liquidity, control, and pyramiding. Under the heading of practices there is a long chapter on internal finance, with a remarkably lucid exposition of the way in which present accounting conventions are liable to lead to excessive payments of tax and dividends at times of rising prices, and conversely at times of falling prices, thereby aggravating the trade cycle. Then there follow chapters on methods of raising external finance, whether privately or via the new issue market. Finally, there are two short chapters on topics about which economists are inexcusably ignorant, namely the procedures for altering shareholders' rights and for dissolving a company.

Though its subject matter is pedestrian, this book is never dreary. The English is lucid and lively and many of the issues raised are seriously thought-provoking. For example, I myself was particularly interested by Professor Paish's emphasis on the weak position of many holders of preference shares and of the minority shareholders in subsidiary companies, by his argument that " a satisfactory definition of profits should offset changes in the purchasing power of money in general, but not changes in the replacement cost of particular assets ", and by his suggestion that the relief afforded to debtors by a general rise in prices might justify " some form of tax based on the amount of debt owed, or of fixed interest payable ".

I have found only one error—a small verbal slip: " national income " on page 55 should, I think, read " national capital ".

In brief this book fills a gap in economic literature in a most workmanlike way.

BRIAN TEW.

Marx and Engels on Malthus, with Introduction and Notes by RONALD L. MEEK. Lawrence & Wishart. 1953. 15s.

" The struggle against Malthusianism is an integral part of the struggle for peace in the world to-day . . . Malthusian doctrines in their present-day forms [i.e. Keynesian forms] are encouraging preparations for war " (p. 49–50). This is how Mr. Meek epitomises the purpose and point of view, with and from which he has composed this volume. The position is, Mr. Meek explains, that " all the time the Soviet Union and the Peoples' Democracies are growing from strength to strength ", while their " great plans for the increase of food production are making a mockery of the Malthusian theory of population and ' the law of diminishing returns ' " (p. 48–9). Naturally " the imperialists " (p. 50 *et passim*) are desperately groping for a propagandistic counterblast, and " to their aid, faithful as always has come the Reverend Thomas Robert Malthus " (p. 40). To clinch his arguments at some points Mr. Meek adopts the now very " dated " ritual of quoting from the late J. Stalin, who appears here as an authority on the methodology of economic theory (p. 26). Needless to say, Mr. Meek's introductory essay is datelined from Glasgow (Feb. 12, 1953) *before* the sudden and complete abandonment in Moscow of the Stalin cult, with its paraphernalia of ritual quotations (and, incidentally, there has, of course, also meanwhile occurred the abandonment of many of the most fundamental and typical features of those great Stalinist agricultural plans—in Russia, East Germany, etc.—just, oddly enough, when they were in the interesting process of " making a mockery of the law of diminishing returns ").

In due course (p. 53) we come to some short selections, learnedly and helpfully annotated and lucidly translated, from the writings of Marx and Engels. By far the most illuminating and precise of Marx's criticisms are those on the often rather verbal " essentialist " rigmaroles relating to the labour " theory " of value. On Malthus' theory of unemployment and effective demand Marx also makes some interesting points, and his lengthy analysis of the industrial reserve army is included. There are, too, some good and rather Sismondian passages from Engels. But on the subject of Malthus' hypothesis about population growth and living standards—surely the heart of the Malthusian matter—we are given virtually no really relevant analysis from Marx whatsoever, who, judging from these extracts, never seems to have got to grips with the population hypothesis in the manner, for example, of the contemporary *bourgeois* critics recently discussed by Dr. K. Smith. Engels, in one passage, states that the Malthusian population theory " was an absolutely necessary transitional stage, which has taken us infinitely further forward " (p. 62). But Marx, when he really comes face to face with the population hypothesis, mainly confines himself to remarks about Malthus' " fundamental meanness " of outlook (p. 118), about his " shameless and mechanical plagiarism " (p. 119), and about how Malthus was " a bought advocate . . . a shameless sycophant of the ruling class " (p. 123). It is not clear whether it is to this line of attack that Mr. Meek is referring when he claims that the value of his selections lies in their providing " a sustained application of *the Marxist method* " (p. 48). When Mr. Meek, for his part, concludes in more genteel terms that Malthus " was often influenced by what he wanted to prove to a far greater extent than any competent scientist has a right to be ", this may well have some truth in it, both as regards Malthus and indeed all of us. But coming from this particular source, such a charge is really rather too rich. Satan rebuking sin would afford by comparison a highly edifying spectacle.

Clearly it would be inappropriate to expect from Mr. Meek, absorbed in his " struggles " against " Malthusianism " for " peace " and the great Soviet plan before last, that he could regard it as coming within the purview of his duties to refer or guide his readers to some of the closing chapters of the later editions of Malthus' *Essay* (e.g. Ed. VII, chaps. 9 and 14), or to contemporary accounts of Malthus' life and character by those who knew him best (e.g. Ricardo). Possibly the making of such references would have conflicted with Mr. Meek's austere conceptions as to the duties of " the competent scientist ". Certainly they would seem to be incompatible with " the sustained application of the Marxist method ". Readers of *Economica* who recall with gratitude Mr. Meek's valuable articles on the Physiocrats will note, probably with much regret, the considerable change in his intellectual style and standards in this volume published by Lawrence & Wishart.

T. W. HUTCHISON.

Economic Systems. By G. H. HALM. Rinehart & Company, Inc., New York. 1951. x + 438 pp. $4·50.

Comparative Economic Systems. By T. SURANYI-UNGER. McGraw-Hill Publishing Co. Ltd. 1952. x + 628 pp. $5·50. 47s.

These two books attempt, in very different ways, to examine the rationale of economies in which the main economic decisions are made privately, centrally, or on some mixed basis.

Professor Halm's main concern has been to analyse the principles of economic theory which are relevant to, and descriptive of, systems of various kinds. He has attempted, therefore, to set up theoretical models rather than to describe existent forms. His book is, so to speak, a textbook and commentary on the efforts which economists have made to draw up blueprints of, for example, Socialist economics. An important part of the book is devoted, however, to a discussion of the Soviet and the German National Socialist economies. A further section deals with the experience of British Socialism.

As Professor Halm wrote his study " as a text for the course in Comparative Economic Systems, which is now offered at many American colleges " he begins by describing in general terms the problems of the " social economy ". He then goes on to discuss the free exchange system and the " abstract pricing process "; he continues with a discussion of the economic mechanism under Capitalism, an analysis of Marxian economic theory, and a study of the economic theory of Socialism. Here he distinguishes between liberal and authoritarian Socialism; in the latter, consumers' sovereignty, *inter alia*, is abolished.

In his discussion of Socialist economics, Professor Halm rightly draws attention to the problem of what rules of behaviour can be followed by the managers in the collectivist economy. Under authoritarian conditions, an attempt can be made to suppress the problem by eliminating a wide range of freedoms, The price of this, apart from the non-economic considerations, is the creation of the flexibility problem which faces all planners. A system of material balances cannot escape this difficulty. In the liberal collectivist economy, in conditions of risk and uncertainty, the problem of rules of behaviour is absolutely central. It is not merely a question of internal relationships; as Professor Halm points out, some of the arguments of the economics of liberal Socialism result in the end in a kind of replica of an ideally competitive economy. There is public ownership of the productive mechanism and the co-ordination of the market is performed by some central agency in some way. This leaves the question of where the limits of the powers exercised by the central authority are to be set; this is really the problem of *The Road to Serfdom.* Although it explicitly brings out the above questions, Professor Halm's book is at its least satisfactory in its analysis of the planning and decision problems in conditions in which knowledge is imperfect and time is a variable.

Professor Halm has argued the matter with clarity and with unity of theme. This is more than can be said for Professor Suranyi-Unger's book; it is impossible to refrain from commenting on the complication of the style. The book is designed " for the university student who has had a basic course in the principles of economics and for the general reader with some experience and interest in economic problems ". It begins with a discussion of economic systems at work; this is not really an institutional study, but is mainly concerned with the elucidation of different governing principles and is followed by examination of social factors. The latter includes diverse matters, such as legal and geographical factors, and the " strategy of economic systems ", etc. The whole of the remainder of the book is given the heading " Economic Analysis ". This covers the analysis of demand and supply conditions; it goes on to examine conditions of production in agriculture, mining, manufacturing, and trade. Subsequently, Professor Suranyi-Unger discusses the different kinds of income, the influence of the public sector, economic fluctuations, and international trade.

It will be seen that this study ranges far and wide. The chapters are followed by short summaries, series of " review questions ", and extensive bibliography. But the conclusion cannot be avoided that Professor Suranyi-Unger's purpose, in so far as it appears to have been to exhibit the fundamental motives which govern economic behaviour and regulate it in different systems, has been hindered by the very ambition of his effort and by complication in argument and presentation.

A. L. MINKES.

Preliminary Report on the World Social Situation. UNITED NATIONS. U.S.A. November, 1952. 180 pp. 12s. 6d.

World Economic Report, 1951–52. UNITED NATIONS. U.S.A. June, 1953. 132 pp. 11s.

BANK FOR INTERNATIONAL SETTLEMENTS: *23rd Annual Report, 1952–53.* Basle. June, 1953. 235 pp.

These three imposing volumes provide a gargantuan feast of facts and figures, which—although they overlap in certain respects—are in the main complementary, and help to illumine and interpret each other. The *Preliminary Report on the World Social Situation* is a newcomer to the ever growing list of United Nations publications, but it is uncertain whether it will prove the forerunner of a regular series. It is not based on new research, but presents data collected from numerous sources illustrative of social conditions (with special reference to the standard of living) in various parts of the world, expressed so far as possible in a comparable manner. It deliberately excludes any account of national social policies, which are, however, already mostly covered by other United Nations publications.

After a preliminary survey of world population and population trends the report deals seriatim with Health, Food and Nutrition, Housing, Education, Working Conditions and Employment, various " special " problems (e.g. the condition of children, the aged, refugees and displaced persons) and levels of income and welfare. Finally it deals on a regional basis with social conditions in Latin America, the Middle East, and in South and South-East Asia. The emphasis throughout is upon social conditions in undeveloped areas, contrasted with those in advanced countries. The relative position of various countries is summarised in Chapter IX, which includes a table showing 75 areas grouped according to the size of *per capita* income in 1950 (expressed in U.S. dollars). The report deserves a warm welcome and a wide public.

The *World Economic Report, 1951–52* is the fifth of its series, and deals first (Part I) with major national economic changes and trends in three groups of countries (i.e. advanced private enterprise economies; centrally planned economies; and selected countries of Latin America and the Far East): and second (Part II) with International Trade and Payments (also on a regional basis, but with minor variations in the classification). Part II naturally stresses trends in the balance of trade and payments. Here, again, the emphasis is on factual description rather than on policy. Although the Report contains most valuable data, the " regional " basis proves somewhat limiting and even frustrating, possibly because of the great variations in the circumstances of countries included in the same region. More detailed information about particular countries would often be welcome. Supplementary volumes have, however, been published on the Middle East and on Africa.

The *23rd Report* of The Bank for International Settlements is (as usual) more specialised, more thorough and systematic, and more up-to-date than the *World Economic Report*. It concentrates (in addition to its review of the work of the Bank itself) mainly upon monetary trends and problems. Chapter II contains a most illuminating analysis of the internal and external financing of investment by the chief Western countries since 1945; Chapter III deals with price movements, with special reference to the effects of the trend towards the re-establishment of free commodity markets, the checking of inflation, and the urgent need to expand food production; Chapter V deals with recent trends in foreign exchange rates, Chapter VI with gold, monetary reserves and capital movements; whilst Chapter VIII analyses the present position and problems of E.P.U.

VERA ANSTEY.

Indians Overseas: *1838—1949*. By C. KONDAPI. Oxford University Press. 1952. xi+ 558 pp. Rs. 20. 35s.

This impressive volume is a reference book rather than a book to be read. It brings together a mass of material—culled mainly from official reports and documents of various sorts—relating to the origin and systems of recruitment of Indian labour for employment overseas, the conditions of labour, development and present content of labour legislation and welfare services, the provision and nature of educational facilities, special problems arising during the recent war, the disabilities affecting Indians overseas (in relation to entry into and residence in overseas countries, the occupation and ownership of land, trading rights and employment, social and religious institutions and political status), and certain administrative matters. A final chapter makes suggestions for future reforms and policies. Appendix I gives a table showing the number of Indians in various countries at recent dates, but unfortunately does not show the proportion of Indians to total population. Appendix II gives a list of Indian Associations (commercial, for welfare purposes, political and, in particular, industrial) area by area. Finally there is a rather meagre bibliography, which is, however, supplemented in footnotes to the text which refer to important books whose absence from the bibliography seems unfortunate.

The method pursued is almost entirely descriptive, dealing seriatim with each territory in which Indians are to be found in substantial numbers. There is little or no attempt to co-ordinate the mass of material, or to gauge and compare the effects of the conditions to be found, and policies pursued, in the various territories. This is not to say that the facts are presented " without comment ". On the contrary the treatment accorded to Indians is—quite naturally and with much justice—criticised and condemned, but it is a pity that no serious attempt has been made to analyse the problems which inevitably arise from inter-racial intermingling of this type. For instance Chapter I gives a very garbled account of the origin and problems of Indian emigration. This suggests, *inter alia*, that the high assessment of land revenue on the landlords under the Permanent Settlement was a major cause of the poverty of the cultivators and of emigration—a suggestion which is, to say the least, lacking in finesse. After all it was not the " landlords " who emigrated, nor did the Permanent Settlement apply to the greater part of the country. Hence the more fundamental defects of the policies pursued remain unmentioned.

Similarly the reforms advocated in the final chapter—being unrelated to any thorough analysis of the problems involved or to the present-day world economic outlook and the policies of the major countries (including those of India and Pakistan)—give little promise of meeting the case. How, for instance, can a system of " free emigration " be combined with the grant of quotas to employers ? Nevertheless Mr. Kondapi clearly establishes his case for the urgent need for reform, and has performed a useful service in bringing together this mass of data. On the whole he has accomplished this latter task efficiently, although from time to time he fails to make the existing situation clear—for instance with regard to the present disfranchisement of the bulk of the Indians in Ceylon.

VERA ANSTEY.

Federalism : *An Australian Jubilee Study.* Edited by GEOFFREY SAWER. F. W. Cheshire for Australian National University. Melbourne. 1952. xii + 284 pp. 39s. 6d. (A.)

There are two schools of thought about the economic problems of federalism : that they are common to most federal countries, and that they are unique to the federation where they are encountered. The discussion of methods of overcoming them is similarly divided. The argument is illuminated by these published deliberations of a seminar on federalism of professors, politicians and civil servants held at the Australian National University in 1951. An analysis of the federal position of Northern Ireland was presented by Professor Montrose, and of Canadian public finance methods by Professor Mackintosh. Dean Griswold of Harvard and Professor Wheare of Oxford provided legal and political contrasts with other states. The remainder of the papers, including one on public administration by Sir Douglas Copland, and another on judicial review by the editor, were confined to Australian experience. The reader of all these contributions is left with the opinion that the problems of Australian federalism can better be understood by studying the Australian people than by studying other federations.

Mr. H. P. Brown recounts fully the history of tax and spending arrangments between the states and the Commonwealth. These have progressed toward more centralisation of power than is now acceptable to the strongest states, so that there is a new reaction toward state financial autonomy. This reflects less as affection for financial responsibility than local impatience with the inelasticity of Commonwealth grants together with the antipathies and jealousies existing among the political parties. The heated Canadian dominion-provincial meetings seem mild beside those of Australia, and Dean Griswold's description of American federal institutions sounds positively Utopian. On the whole, the Australian participants disagree with Professor Wheare's suggestion that federalism promotes democracy and retards bureaucratic control, yet somewhat inconsistently seem to support Mr.

Colin Clark's corollary assertion that governmental duties should devolve further to the lowest level of government capable of performing them.

Mr. Clark suggests that local finances should as far as possible be based on purely local taxes augmented by unconditional percentage grants to the more willing and able states. The deficiency of tax collections per head in the poor states should then be made up to the national average by special allowances. This scheme would work out much like the central and local government arrangements in the U.K., and would seem to require less investigation into purely local arrangements than the Commonwealth Grants Commission must now undertake. However, there has been little complaint by Australians of the Commission's activities, a fact which has been a matter of some envy in other federations. Mr. Clark rightly points out that his scheme would require more tax sources than the states now have if the grants are not to make them irresponsible spending agents of the Commonwealth.

Such difficulties naturally led some participants to ask if federalism is necessary to Australia at all. Certainly the financial complexities appear to be a disintegrating force in themselves. The inability of the Commonwealth to arrest state developmental expenditure during inflation, and the apparent non-existence of a certain device for assuring state spending during depression indicate further that major re-adjustments of the economic relationship between the Commonwealth and the states are to be expected.

A. D. SCOTT.

The Nature of Competition in Gasoline Distribution at the Retail Level (A Study of the Los Angeles Market Area). By RALPH CASSADY, JR. and WYLIE L. JONES. University of California Press. Cambridge University Press. 1952. xii + 220 pp. 26s.

The empirical investigation of market behaviour and of competition in industries and trades in which there are many firms is made difficult by the very fact that there are many firms. Perhaps that is why most of the small number of industry studies which have been made refer to markets supplied by a few large firms or by a few large firms and a fringe of small ones. The authors of this study of petrol retailing in the Los Angeles area during the period 1948–50 deserve our thanks for their interesting essay in a difficult field.

There were close on 7,000 service stations in the area in 1947. Their petrol was supplied by 7 major refining companies, 4 of their subsidiaries, and 23 independents. To keep track of the most important actions of these firms, and of their effects in the market, the authors have made use of a variety of sources of information. Official statistics, published price statistics, surveys of consumer spending and consumer preferences are used—but it is clear that the most interesting parts of the study are the outcome, very largely, of close personal observation and the findings of " hundreds of carefully planned interviews ". The thoroughness of the investigation is impressive.

After discussing the conditions of supply and demand for petrol in general, the authors analyse the factors which influence the competitive behaviour of the retailers. For convenience the retailers are divided into " conservative competitors ", " aggressive price competitors " and " defensive price competitors ", but much detailed information is given about many individual firms. The attitudes of different retailers, the degree of control exercised by suppliers, the divergence of interests between dealers and their suppliers, the behaviour of consumers and the effects of legislation (e.g. ordinances hampering the operations of self-service filling stations in parts of Los Angeles) are explained and illustrated. The policies of the principal suppliers and the relationship with their dealers are set out. The interest of the major suppliers in wishing to avoid price competition in the retailing of petrol is stressed; this influences their attitude towards those dealers over whom they have some sort of control by means of contracts of one kind or another. At the same time it is shown that the " aggressive " retailers nevertheless have access to supplies of petrol, a large part of which comes from the major refining companies, directly or indirectly. The study shows that between 1947 and 1949 the major suppliers and their dealers were being hurt by " aggressive " dealers; towards the end of 1949 they were forced to adjust their prices. The spread of retail price-cutting is carefully described.

The authors conclude with the hope that their study will stimulate similar studies elsewhere, so that the materials will become available for a " fact-founded " theory of competitive behaviour. It will be good if their example is followed. But their careful study itself may deter likely followers, because it reveals the complexity of the task. And even then—though this is not intended to depreciate the work under review—in one important respect the subject of the investigation is relatively uncomplicated; for it is concerned with the selling of only one product. This has enabled the authors to use price data in a way which is denied to investigators of many other branches of industry or trade.

B. S. YAMEY.

Wages and Salaries in the United Kingdom 1920–1938. By AGATHA L. CHAPMAN, ASSISTED BY ROSE KNIGHT. Cambridge University Press. 1953. xiv + 254 pp. 55s.

This is the firstfruits of the comprehensive study of national income and expenditure in the United Kingdom before 1938, which is being carried on under the direction of Richard Stone. It now becomes our chief authority for the subjects with which it deals. For wages it provides a more detailed estimate than Bowley or Clark; for salaries it provides estimates where there were none before. Both wages and salaries are given annually, and for each of sixty industries, or groups of industries, which between them cover the whole Standard Industrial Classification. The workings require estimates of the numbers of salaried employees and wage-earners in each industry, and provide a guide through the varied materials in this difficult terrain; users of the results must bear in mind that they " represent man-years of employment rather than the total number of persons in employment ". The exposition is a model of clarity and thoroughness, and commands our confidence.

The estimate of the total wages-bill comes out, from 1929 onwards, between 5 and 10 per cent. higher than Bowley's. The difference is mainly due to higher average earnings being taken in transport and " personal and other services ", and perhaps to Post Office employees being treated as wage-earners instead of salaried. We shall wait with interest to see, as the new estimates for other components of national income become available, whether this substantially higher figure for the wages-bill, and the greater rise between 1924 and 1938, alter our view of the distribution of the national income.

The book is beautifully produced, in a broad format that suggests a monograph on the cartoons of Raphael; but fifty-five shillings is a lot of money, and I believe that most of the users and the would-be users of this now indispensable source would prefer a kerb finish and a lower price.

E. H. PHELPS BROWN.

La Zone Sterling. Économie Appliquée, Tome VI, Numéro I. I.S.E.A. Presses Universitaires de France. 1953. 263 pp.

The growing literature on the sterling area has been augmented by this French symposium of sterling area problems. It consists of five articles by French authors and short comments by British authors. The articles deal with problems of the United Kingdom economy since the war, the British coal and iron and steel industries, the United Kingdom balance of payments, the organisation of the sterling area and the role of sterling as an international currency, and British investment in the overseas sterling area since the war. These French studies are written with sympathy and understanding. The authors rely to a large extent on United Kingdom official publications for their information. This will make the present volume welcome to students of the sterling area who want a sound general survey, but a shorter one than the E.C.A. Report.

It is an invidious task to select any one of these articles for special review, since they are of about equal standard. Nevertheless, the attention of English readers must be drawn especially to Monsieur E. Lisle's article on British post-war investment in the overseas sterling area since the war. There is less information available on this subject in English literature than on the other subjects dealt with in this volume. The author estimates United Kingdom long-term capital exports to the overseas sterling area between 1945 and 1951 at between £1,050 and £1,350 millions (p. 242)—compared with Professor Paish's estimate of " nearly £1,000 millions " between December 1945 and June 1952 (*District Bank Review*, March 1953, p. 5). Of this the colonies received between £400 and £500 millions. Between two-thirds and three-quarters of this was " public investment ", i.e. administration, transport, and social services; only the remainder went into " commercial investment ". In the African colonies only 15 per cent. of total United Kingdom investment was " commercial investment ", and this includes the groundnuts (p. 243). In the dominions much of the United Kingdom long-term capital was invested in consumption goods industries, rather than investment goods industries (p. 245). The author analyses the changing direction of the external trade of the overseas sterling area, and finds the sterling area as a whole as a net importer of food, raw materials, and manufactures (p. 248). This he considers to be in part the result of " misdirection " of post-war investment.

F. V. MEYER.

Hansard's Catalogue and Breviate of Parliamentary Papers, 1696–1834. Reprinted in facsimile with an Introduction by P. FORD AND G. FORD. Basil Blackwell. Oxford. 1953. 40s. net.

Select List of British Parliamentary Papers, 1833–1899. P. FORD AND G. FORD. Basil Blackwell. Oxford. 1953. 27s. 6d. net.

Professor and Mrs. Ford hinted in the introduction to their *Breviate of Parliamentary Papers, 1917–1939* at further work of the same kind, and students of the social sciences have now been provided by them with two further volumes, the one a valuable Reprint, and the other an entirely new list of first-class importance.

The *Catalogue and Breviate of Parliamentary Papers, 1696–1834* was the work of the Hansard family and arose from demands of the unreformed Parliament, in its last years, for references to the Papers of earlier years. The Hansard family set out to compile a systematic " help to Consultors of the Papers " and the volume now reprinted was the final result of their efforts. The appalling problems of classification were overcome with understanding and skill. The original compilers could not be expected to anticipate the interests of posterity, and the famous Bullion Report of 1810 is sandwiched between a Report on " the Miscarriages of the Officers of the Mint " and a Report on the state of the coins—but the important papers are all there, can be traced easily, and have their contents briefly indicated. The existence of this volume must have been partly responsible for the concentration of the early economic historians upon official papers. It has, however, been scarce for a long time, and many libraries in the social sciences have now for the first time an opportunity to acquire it. Professor and Mrs. Ford have added to the usefulness of the volume by including a " Select List of House of Lords' Papers not in this Breviate ", and a scholarly Introduction explaining how the Hansard work originated.

The *Select List of British Parliamentary Papers, 1833–1899* is designed to make more accessible—and better known—the rich stores of material in the " several thousand " volumes of 19th century Papers of the reformed House of Commons, in so far as these consist of inquiries (not purely statistical) in the fields of constitutional, economic and legal policy. House of Lords' Papers communicated to the Commons have been automatically included by the practice of the House of Commons in printing these among its own papers, but Professor and Mrs. Ford have gone to the trouble of searching House of Lords' Papers so that others of relevance could be included in their *List*. Altogether, more than 4,500 items are included.

As in the *Hansard's Breviate*, the problems of classification were extremely difficult. The introduction briefly explains the method followed, and a spot check indicates that great care has been taken. Where desirable, items have been repeated under different classes: for example, the 1847–48 papers about the commercial and banking crisis are included both under " Currency, Monetary Policy, Financial Institutions ", and under " General Trade Conditions and Policy ".

In their Introduction the editors explain at length how they have dealt with the tricky problems of titles and references. The careful attention they have given to this problem gives weight to their plea to scholars for care in the citation of papers. The forms used in the two volumes now published might well be adopted as standard.

No library with any pretensions at all in the social sciences can afford to be without these volumes. Research workers for generations will be indebted to Professor and Mrs. Ford for their work. The Leverhulme Trustees can seldom have financed work of more widespread value to scholars. A final word of appreciation must go to the printers for having worthily discharged a rather special task.

R. S. SAYERS.

SHORTER NOTICES

Hermann Heinrich Gossen, 1810–1858. By HERMANN RIEDLE. P. G. Keller, Winterthur. 1953. ix + 137 pp. S.Fr. 12.

The purpose of this book is to provide a comprehensive critical exposition of Gossen's rather neglected masterpiece due to become 100 years old in 1954. Dr. Riedle tells us in severe italics that Gossen must be read in his entirety or not at all, and emphasises the range and thoroughness of his theories. But it is subsequently conceded that Gossen's later pages—(he has, of course, no *chapter* divisions)—on the subjects of price, distribution, and welfare, are not quite on the same level as his classic treatment of the individual consumer, though there remains much of interest in his proposals for land nationalisation, and for the organisation and maintenance of competition. It was Gossen's statement of his " second law ", the equi-marginal maximising solution of the consumer's problem, which provided the archetype formula for almost an epoch of economic theorising. We must be grateful to Dr. Riedle for providing so lucid, well-balanced, and comprehensive a guide to an extraordinary pioneering work which, partly at least because of its own deficiencies, has never received the attention which its originality deserved.

The Theory of Price. Revised Edition. By GEORGE J. STIGLER. Macmillan Company, New York. 1952. vii + 310 pp. Price $4·50.

Professor Stigler's well known textbook has been revised in content, form and appearance. In fact, the alterations in its physical appearance by a reduction in height and increase in breadth is symbolic of the changes in it. Some rather difficult methodological problems at the beginning have been removed, the exposition of the theory of demand simplified and the mathematical notes relegated to an appendix. The most welcome change is the addition of a wealth of illustration of pricing problems which is unrivalled in any comparable textbook. One may quibble over such matters as a definition of economics which includes the word to be defined (p. 1) and the all-too-short criticism of monopoly (pp. 213-14 and p. 271); but it is sufficient of a recommendation to state that the revised edition is an improvement on its predecessor and preserves its distinctive style and good humour.

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The Colombo Plan

By Frederic Benham

I

The Colombo Plan is one of those voluntary and flexible arrangements, based on goodwill, which are not subject to any formal rules. It is not really a Plan at all. It may be regarded as an envelope covering the development programmes of member countries in South and South East Asia. But each of these countries is completely free to revise its development programme whenever and however it may wish; it is not subject to any control by other members over either its general planning or its detailed administration of its various projects. The Plan promotes co-operation, mainly in the provision of financial aid and technical assistance, between the countries of the area and member countries outside the area, and also between the countries of the area themselves. But every offer of help is the subject of direct bilateral negotiation between the two countries concerned, who settle all the details entirely between themselves.

There is, however, a Consultative Committee of all member countries. This holds annual meetings, of which so far there have been two (at Karachi in March 1952 and at New Delhi in October 1953), to review the progress achieved and the outlook for the future. At these meetings, ministers and officials from the various countries exchange information and views about the economic problems of the area; they learn at first-hand what is happening in each country in the economic field. The account given by one country of the devices it has adopted to tackle particular difficulties, and in what respects they have succeeded or failed, may be very helpful to another country faced with similar difficulties.

There is also a Technical Co-operation Bureau, governed by a Council of the member countries, at Colombo. The Bureau acts as a post office, and to some extent as an employment exchange, in co-ordinating the flow of technical assistance, trying to marry offers and requests and to prevent overlapping with other bodies, such as the United Nations and the United States, providing technical assistance to the area under their own schemes. The Bureau has recently been supplemented by a small Information Centre on the Colombo Plan.

The Plan was launched early in 1950 at Colombo (hence its name) as a Commonwealth Plan.[1] The original members in the area were

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[1] Cmd. 8080: "The Colombo Plan for Co-operative Economic Development in South and South-East Asia." The first annual report of the Consultative Committee is Cmd. 8529 and the second is Cmd. 9016.

Ceylon, India, Pakistan, and Malaya (with British Borneo). The original members outside the area were Australia, Canada, New Zealand, and the United Kingdom. But it was intended from the start that the Plan should be in no way restricted to the Commonwealth. The member countries in the area now include also Burma, Indonesia, Nepal, and Cambodia, Laos, and Vietnam, while Thailand and the Philippines can obtain technical assistance through the Bureau and send observers to the meetings of the Consultative Committee and the Council; and the United States, which took an interest in the Plan from the outset, soon became a member.

II

Estimates have been made of the national incomes of most countries in the area. Before the Korean boom of 1950–51, most of them averaged £20 to £25 a year per head of population, the outstanding exception being that of Malaya, which was about £60. At present most of the figures are substantially higher (perhaps £30 to £45) but this increase is due mainly to higher internal prices and costs—the aftermath of the boom.

These very low income figures indicate such depths of poverty that one's first reaction is to query them. Surely standards of living cannot be as low as that ! Do not the estimates of national income contain serious gaps or are there not some major differences in conditions, for example a much lower cost of living in the East, which should be taken into account when making comparisons with western countries?

A main difference between most parts of this area and the more developed countries of the west is that in the former more goods are produced by farmers, fishermen, and others for their own consumption rather than for the market. I think that most of the national income figures considerably underestimate the amount of such consumption. I think that they also value it too low. In my view, it should be valued at its retail price in the nearest local market (which is what the producers or their neighbours must pay for whatever amounts they buy) rather than at the net price which the producer would get if he sold it instead of consuming it.

It is also true that in tropical districts the need for warm clothing, substantial buildings, household fuel, and possibly food is less than in colder climates. Sunshine, being a free good, is not included in national income calculations.

But it is not true that the cost of living is appreciably lower in this area. Poor means of transport, by restricting farmers to the local market, keep down the prices of products such as vegetables and fruit in the producing districts, but they keep them up in the towns and other areas which are short of them. Most (but not all) labour services are cheaper than in western countries, but most manufactured goods are dearer, and rice, the staple food of most of the area, has been dearer than wheat flour since the war.

The conclusion is that the national income figures do not give a very exaggerated measure of the poverty of the area. This conclusion is confirmed by such statistics of consumption as are available. The average consumption of food per head in India is only about 1,700 calories a day; it is somewhat higher in most other countries but still below the minimum required for health and efficiency. Moreover, the great bulk of the food consists of rice, wheat, coarse grains, starchy vegetables, and other carbohydrates; there is far too little consumption of meat, fish, and other protein and of " protective " foodstuffs such as milk and green vegetables. Most people in the area suffer to some extent from malnutrition; this contributes towards the relatively high death rates and partly explains the lack of energy of many workers.

Although the consumption of food is inadequate, most of the population spend the greater part of their incomes on food and have not much left over for anything else. The average consumption of cloth per head is only 10 to 15 yards a year in most of the countries of the area; housing conditions are wretched; and only a small minority can enjoy amenities such as travel.

The main purpose of the Colombo Plan is to raise these very low standards of living.

III

Apart from aid by other countries, there are three possible ways in which the standards of living of the mass of the people might be raised. The relatively rich might be taxed in order to finance public expenditure on purposes such as food subsidies which benefit the masses. The terms of trade might be improved. Output per head might be expanded.

Most of the countries do have progressive income-taxes and death duties. But their yields are low. This is due partly to evasion, which the tax-collecting staffs are not large enough or competent enough or possibly, in some cases, honest enough, to prevent. The main reason for the low yields, however, is the pattern of distribution of income and wealth. The rich are a small minority; the overwhelming majority of the people are massed near the base of the income pyramid. Less than 1 per cent. of adults pay income-tax at all and few pay large amounts; the rest have incomes below the exemption limits. For example, in India only 547,000 individuals plus 66,000 Hindu families paid income-tax in 1952. Hence there is not very much scope for raising general standards of living by this means.

The effect of a change in the terms of trade depends, of course, on the magnitude of the change and on the proportion of the country's output which is exported. In the short run, such a change may be far and away the most important factor determining the economic position of a country. The chief exports of the countries of the area (except for Burma and Thailand, which export mainly rice) are raw materials which are liable to wide fluctuations in price: cotton and jute from Pakistan, rubber and tin from Malaya and Indonesia, copra from the

Philippines and Indonesia and Ceylon, manufactured jute (e.g. burlap) from India. Malaya exports a large proportion of her output and her economy is dominated by the export price of rubber (and, to a much smaller degree, of tin); the same applies (although a smaller proportion of her total output is exported) to Indonesia; and Ceylon also produces largely for export (tea, rubber, and copra). Other countries are less powerfully affected by changes in the terms of trade, but nevertheless they can be very important.

The significance of changes in the terms of trade to the area was illustrated by the boom in the prices of raw materials, associated with the war in Korea, during 1950–51. The prices of cotton, jute, rubber, tin, copra, and other materials rose sharply; the export earnings, national incomes, and public revenues of most of the countries considerably increased; they were able to finance their development programmes largely from their own resources and at the same time to increase their external and internal reserves. But the boom was short-lived; the Consultative Committee noted in March 1952 that it had already come to an end; and now the terms of trade have swung back to around their pre-1950 levels.[1]

How far can the countries of the area control their terms of trade? Their consumption of imports forms too small a part of the total world consumption for changes in their demand to have an appreciable effect on prices; in any event it would clearly be folly for a country to reduce drastically its imports of some commodity simply and solely in the hope of thereby reducing its price. Exports are another matter. The area produces most of the world's natural rubber and jute and a large proportion of some other commodities such as tin and tea. It might be possible for the countries producing such a commodity (together with other producing countries outside the area) to act monopolistically, keeping up the price by restricting the supply; and the higher price per unit might more than offset the reduction in quantities sold which brought it about.

Such commodity restriction schemes are usually undesirable from a general standpoint. They do not merely benefit producers at the expense of consumers by keeping up prices. In practice they tend also to maintain the proportion of total output produced by the less efficient areas and producers and to retard the application of improved techniques. From the narrower standpoint of the producing countries

[1] The magnitude of the swing is illustrated by rubber. The price of rubber rose from less than 1s. a lb. in 1947–49 to an average of 4s. 3d. in 1951; it is now back to about 1s. 4d. The area exported some 1¾ million tons of rubber in 1951, yielding (allowing for lower grades) over £700 million. The comparable figure (for an amount only 9 to 10 per cent. less) is little over £200 million at present prices. Burma and Thailand export mainly rice, but as most of it is bought by countries in the area the terms of trade of the area as a whole are affected only slightly by changes in its price. During 1951 and 1952 there was a rise of over 20 per cent. in the export prices of rice from Burma and Thailand; this strengthened the financial position of these countries but tended to raise the cost of living in the importing countries. Recently the position has been reversed; rice prices have fallen sharply to below their 1950 levels.

they have the disadvantage of stimulating output in other countries which are not parties to the restriction scheme, and of encouraging the search for and development of substitutes. There is also the difficulty that a country which keeps down its output to its agreed quota is penalised in so far as other restricting countries exceed their quotas because they are unable to administer the scheme effectively.

There is already a restriction scheme for tea but I doubt whether such a scheme would be profitable, or will be established, for any other export with the exception of tin: there is a draft scheme for tin which can be defended on the ground that known deposits are very limited in amount; and the supply conditions may enable it to be effectively administered. A scheme for rubber would be difficult to administer, and synthetic rubber (of which more would be produced should the price of natural rubber be raised) is a close substitute. Other exports are probably ruled out because, as with cotton, too small a proportion of world output is produced in the area or because, as with jute, close substitutes are available.

Buffer stocks may possibly be set up for one or two commodities. But a buffer stock can only smooth out temporary fluctuations in price; it cannot prevent a long-run downward trend in price due to a general fall in the demand for that commodity or to a reduction in its costs of production.

The conclusion is that although changes in the terms of trade may have a dominant influence in the short run the countries of the area are powerless to control such changes. They have to accept them, much as a farmer has to accept the weather. The farmers cannot rely on always having good weather; nor can they rely on always having good prices for their exports. Their terms of trade will be more favourable at some times and less favourable at others. They can, if they choose, take measures to smooth out the internal effects of such changes. Thus most of them levy export duties, raising the rate of duty when prices are high and reducing it when they are low; they might (but do not) go further, and subsidise their producers when prices are low out of reserves built up when prices were high.[1] But, broadly speaking, the only way to raise standards of living that lies within their power is to increase their output per head. The terms of trade may swing one way or the other as time goes on; but in the long run their standards of living will be governed by their productivity per head.

IV

One important influence affecting output per head is the size of the population relatively to the resources. The resources of the area consist predominantly of agricultural land; there are some minerals,[1] but mining is relatively unimportant compared with agriculture. The density of population varies, of course, between districts; for example, it is far greater in Java than in the other islands of Indonesia, and several times greater in East than in West Pakistan; and North Borneo is short of labour. But the area as a whole is heavily overpopulated, and this is a major reason for its low productivity per head.

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[1] It would be undesirable to maintain output in an export industry (by subsidising it from reserves) if the fall in price were due to a permanent change in conditions, and some factors could now earn more by moving out of that industry into others. But there may be a case for partially smoothing-out the incomes of producers when fluctuations are due to merely temporary changes, which will be reversed before very long.

Much of the area consists of land which cannot be cultivated—mountain or desert or swamp—or of land at present under dense jungle. In most countries less than a quarter of the total area is cultivable. The small amount of cultivated land per head is shown by the following figures:

	Area of Cultivated Land (Million acres)	*Population (Millions)*
Burma	22	18
Ceylon	3	8
India	340	360
Indo-China	12	25
Indonesia	28	80
Malaya	5	7
Pakistan	53	80
Philippines	21	20
Thailand	12	18

As the majority of the population in the area is engaged in agriculture, it is obvious that the average size of holding, although occupied by a family and not by a single individual, must be very small. Such statistics as are available confirm this. In some countries (notably Ceylon, Indonesia, and Malaya) there are some relatively large estates producing tea, rubber, and other export crops, although most of the land is in smallholdings. But the shortage of land would not be relieved by breaking up the estates into smallholdings, for the estates employ at least as many persons per square mile as the rest of the cultivated land, and, generally speaking, pay wages higher than the average income of a smallholder.

If legal arrangements were altered in order to prevent a holding below a certain size from being divided—notably among the various sons at the death of the father—this would prevent the further " fragmentation " of holdings but it would do nothing to improve the ratio of land to population. The measures being taken in India to consolidate (by exchange among smallholders of different plots of land) holdings formerly divided into several tiny plots, separated from one another, are a needed reform (although they are progressing only slowly) but they too cannot solve the fundamental problem of too little land.

[1] They include: some oil, in Indonesia, Burma, and Brunei but only about 2 per cent. of world output; coal and iron ore, both mainly in India; tin, mainly in Malaya and Indonesia; and some bauxite, tungsten and other minerals.

In some countries, too high a toll may be levied on the cultivator by his landlord or by moneylenders or tax collectors. But even if the smallholder kept the whole of the yield for himself, it would still be too small. The typical holding of two to five acres provides neither full and continuous employment nor an adequate income for the family which cultivates it.

If populations were smaller, the average size of holdings, and the income and employment provided by them, would be correspondingly larger. It is clear that a major reason for low standards of living is overpopulation.

Overpopulation is becoming worse. By 1956–57 the total population of the area will be 31 per cent. greater than in 1934–35 but the output of both agricultural products in general and of foodgrains in particular, even if all planned objectives are fully achieved, will be only 19 per cent. greater than it was then.[1] Consequently the area, which before the war was a net exporter of foodstuffs (nearly 3 million tons a year), is now a net importer (about 8 million tons a year) and the general trend of standards of living during the last twenty years has been downward over most of the area.

The total population of the " Colombo Plan " countries is over 600 million and is increasing at the rate of about 8 million a year. Moreover, the rate of increase may be considerably speeded up by health measures which, on humanitarian grounds, are badly needed. In Ceylon a successful campaign against malaria in the late 1940s has halved the crude death rate: it is less than 13 per 1,000 to-day. There is room for similar reductions, by campaigns against various diseases, in other countries where death rates are still very high.

The consequence is that even the substantial measures of planned investment under the Colombo Plan can do little more than prevent the present low standards of living from falling still lower. The only permanent solution is widespread birth control.

V

Birth control, however, is unlikely to make much headway. Most of the population of the area is illiterate; it is an almost impossible task to persuade them to change their beliefs and habits and to limit the number of their children. It is a task which, in my view, should be undertaken, since birth control would be by far the most effective solution. But we should not count on any appreciable measure of success for some years at least. The population of the area will continue to grow, perhaps by some 150 million by 1970, and therefore the economic outlook is extremely gloomy.

Could not a substantial improvement be made by persuading a large proportion of the present agricultural population to leave the land and enter other occupations? In an overpopulated country, is there not great underemployment in agriculture? Would not, say, two-thirds of the present agricultural population produce about the same total output, and would not any goods and services produced by the third who entered other industries be a net addition to the real income of the country? Should not industrialisation, in a wide sense, be a major aim?

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[1] " Agriculture in Asia and the Far East." F.A.O. (1953), page 22.

There is clearly some force in this contention, but less than is often believed. I will simplify the discussion by assuming, to begin with, a closed economy. This assumption strengthens the case for industrialisation, since everything consumed in the country must be produced in the country and no question can arise of whether it may not be more advantageous to import goods than to produce them at home.

The basic need is food; the lower the family income, the greater the proportion of it spent on food. If there were no overpopulation, no underemployment in agriculture, this would mean, as it has meant in western countries, that a larger output per worker in agriculture would be an essential condition for industrial expansion. So long as the labour of one family on the land produced little more than enough food for one family, the great bulk of the population would have to be rural and engaged in agriculture. When one family's labour on the land produces enough food for, say, three families, then two-thirds of the population can be engaged in manufacturing and other non-agricultural industries. The industrial revolution in Great Britain, for example, was made possible by a whole series of striking improvements in the technique of agriculture.

This situation is substantially modified by overpopulation. But it remains true that the basic need is food. If the agriculture of the country produces too little food to give the population an adequate minimum diet, no amount of expansion in other industries can remedy that deficiency. The country may produce more manufactures and more services; it still will not produce enough food. Whether or not the argument for industrialisation in this area is valid, food consumption is so low that priority should be given to measures to expand, very substantially, the total output of food.

It is very doubtful whether the total output of food would remain nearly as large if a substantial proportion of workers were taken off the land. It might fall quite considerably.

Yields per acre in this area are low. To take an extreme but important example, the average yield per acre of rice in Japan is over a ton; in this area it is about a third of a ton or less. No doubt the low yields in this area are due largely to poorer varieties or to less use, or no use at all, of fertilisers, or to lack of irrigation water. But they are due partly to the simple fact that many of the farmers do not work so hard as farmers elsewhere. They do not cultivate their land so intensively, keeping it free from weeds and pests. For example, in certain parts of the area (e.g. Ceylon) the more arduous method of transplanting rice from nurseries is often not followed although it would give higher yields.

A moist, hot climate is not conducive to energetic toil. Many of the peasants in this area are undernourished and physically weak; some are chronic sufferers from diseases such as malaria; many may prefer to spend most of their time in meditation or in sleep rather than in working. But whatever the reasons may be, it is a fact that they get less output than they might out of their little holdings. If the average size of holding were increased by, say, 50 per cent. I doubt very much whether most families would put in 50 per cent. more work.

A considerable part of the underemployment in agriculture is seasonal; the work is done mostly during seed-time or harvest, and little is done during the dry months or periods of heavy rain. This type of underemployment is not remedied by reducing the number of agricultural workers. The remedy varies according to local conditions. In some areas it would be possible to dig irrigation wells and raise two crops a year. In many districts mixed farming with livestock (possibly stall-fed on fodder grasses) might be the best solution.

In order to provide employment opportunities for large numbers of workers in non-agricultural industries, a considerable amount of capital would be needed. But capital is especially scarce in this area; incomes are so low that the margin for saving is very small. An alternative use for such capital as is available, or for much of it, would be to expand the output of food. The transfer of large numbers out of agriculture into other industries would absorb capital which might have been invested in agriculture. The same applies to training. Peasants and their children need training to qualify them for skilled or semi-skilled occupations (and the Colombo Plan provides for such training) but an alternative is to train them to improve their agricultural methods.

Hence it is not true that anything produced by workers taken off the land would be a net gain. In the first place, total agricultural output would fall, perhaps quite considerably, whereas a large expansion is the basic need. In the second place, the capital and training needed for industrialisation might be used instead to increase the productivity of agriculture. A large and growing surplus of food, above the food requirements of the cultivators themselves, is needed not only to give the population a more adequate diet but also to provide the purchasing-power, the home market, for industrial expansion.

These considerations have had a growing influence on opinion during recent years. The development programmes of most countries in this area have been revised, some several times, in order to give more weight to increased productivity in agriculture and less weight to industrialisation. The greater part of the planned investment is now devoted, directly or indirectly, towards expanding the output of agriculture.

VI

I have been assuming a closed economy. If we think of a country which was formerly isolated and self-supporting it is clear that international trade may provide great possibilities of raising its real income. Some of its products may command a good price in the world market. By specialising on them the country may be able to obtain far more food and manufactures in exchange than it could produce for itself with the same factors of production.

For example, the relatively high income per head of Malaya is due largely to specialisation on rubber. Some of the land is suitable for rice, and Malaya produces some 40 per cent. of her rice requirements, as well as some other foodstuffs and some manufactures. But most of the soil is poor, and if Malaya had to be self-supporting her output per head would be low. However, the constant moist heat and abundant rainfall are suitable for rubber. Malaya herself consumes very little rubber, yet most of her cultivated land is producing rubber, practically all for export. A given amount of labour, land, and other resources engaged in producing rubber yields much more food or manufactures, through international trade, than it would yield by producing them directly.

International trade, therefore, somewhat changes the picture. An alternative to producing more food is to import more food in exchange for exports. International trade also weakens the general case for industrialisation. A country may obtain some manufactures more cheaply—that is, with less labour and other resources—by importing them in exchange for exports than by producing them for itself.

The extent of the gain from international trade will depend, of course, on the proportion of total output which is exported—on the extent to which the nature and quality of the country's resources make it profitable to specialise on production for export. India is a large country which exports less than 10 per cent. of her output and must herself grow the great bulk of her food; Malaya and Ceylon are relatively small countries with a high proportion of exports.

Again, the gain from international trade varies with the terms of trade. The chief exports of the area are raw materials subject to marked fluctuations in price. No doubt a wider range of export and other industries, provided they could all stand on their own feet, would provide more stability of national incomes. But there is no case for " diversification " in so far as it merely means giving up some of the advantages of international trade in order to become more self-supporting: fluctuations in income are a nuisance, but fluctuations at a higher level are surely preferable to stability at a considerably lower level.

Hence the development programmes of the area include measures which aim at increasing, directly or indirectly, the efficiency of the export industries.

VII

The various measures which are most needed to expand output will vary, of course, from country to country and from district to district. Both technical experts and economists are needed to examine each project closely and make sure that the probable additional output warrants the additional cost and that no alternative project would give a higher return. One of the objects of the Colombo Plan is to provide such experts. Other agencies, including the United States F.A.O., the United Nations T.A.A., and the International Bank, are also playing a valuable part in this field.

Only broad generalisations are possible for the area as a whole. One such generalisation, with which I entirely agree, has been made by the F.A.O. It is to the effect that the order of importance of measures to expand agricultural output is: first, measures to avoid losses—for example, from pests, diseases, and poor storage; second, measures to increase output per acre from land already under cultivation; and third, measures to open up new land. The last class of measure is the most spectacular but also the most expensive; it often involves clearing land of jungle and providing the newly-developed area with roads, hospitals, schools, and the whole apparatus of public administration.

One important type of investment is improvements in means of transport and communication, making possible more specialisation by areas. It is little use enabling the farmer to expand his output if he cannot get it to market. Over much of the area roads, especially local roads, are poor and sometimes impassable during wet weather; the area as a whole is poorly supplied with both roads and railways, and some ports and harbours need improvement. Investments in means of transport and communication are basic in that they are still useful even if changes in the conditions of supply and demand alter the types of products which it pays best to produce. The same applies to the provision of cheap electricity, for such purposes as pumping and manufacturing as well as for lighting. A considerable proportion of the development programmes included in the Colombo Plan is devoted to these two classes of projects.

Much could be done to expand output, without heavy investment of capital, if people could be persuaded to do more to help themselves. If the people of a village need better roads, or irrigation canals, or drainage trenches to prevent soil erosion, why should not they themselves provide the labour, without payment, under the supervision of a government engineer? The "community projects" in India and elsewhere are on these lines. If the people of every little district could be induced to help themselves in such ways, the consequent expansion of aggregate output would be very considerable.

Training the cultivator to use improved methods is more expensive in so far as it involves an army of travelling instructors, who must themselves be trained. But again the costs could be kept down if the cultivators themselves could be made eager to learn, and willing to get their instruction by visiting demonstration plots, and if those who had learned the improved methods would spread the gospel among their neighbours.

A pre-requisite to self-help in some countries (Ceylon, for example) is a revision of existing arrangements in order to ensure that the tenant-cultivator, and not the landlord, gets the benefit of increased output due to the improved techniques or greater exertions of the former. In the same way, a wider use of payment by results would provide more adequate incentives to wage-earners.

Throughout the area there is a strong demand for more social services. Their desirability is beyond dispute. But the provision of more schools, hospitals, and similar institutions means heavy recurrent costs for teachers, nurses, and other personnel. The extent to which a country can afford more social services depends on the size of its national income per head. Most countries in the area have been constrained to give only a minor part in their development programmes to capital expenditure on social services. They must first expand their output; as their output expands so will increased expenditure on social services become possible. Technical training, which directly assists in the expansion of output, is an exception to this generalisation.

As capital is scarce and incomes limited, there is something to be said for the growing practice of permitting each local community to decide for itself, to some extent, how rapidly it wishes its social services to expand by making it bear the extra costs, or part of them; if it chooses it can build its own schools, pay for its own teachers, and so forth.

VIII

I will not discuss the development programmes; they are programmes of investment by governments or other public authorities, and they consist to a considerable extent of projects to increase agricultural output, to improve means of transport and communication, and to provide more electricity.

As incomes are so low, the margin for saving is small, and a substantial part of the capital required for the programmes must come from outside the area in the form of loans or grants to the governments. A considerable inflow of external capital into private-enterprise investments would also be desirable.

I shall discuss several questions arising from the inflow, or potential inflow, of external capital. I begin with the question of what are the limits, if any, to the amount of external capital which a country can absorb.

One view is that these limits are rather narrow. This view is apparently supported by what happened during 1950–51, when most countries in the area used only a small part of the external capital that was available to them, and financed their development activity almost entirely from their own resources. But the short-lived prosperity of 1950–51 took them by surprise, giving them large budget surpluses unexpectedly before their plans for many projects were ready or before the necessary preparatory work had been completed. Moreover, at that time many capital goods could be imported only after a long period of waiting; sometimes delivery dates were years ahead and even so they were not always kept. Should a similar commodity-boom take place again it would find the area much better prepared and able to use a much larger amount of external capital if it were available.

The amount of external capital which would yield a certain minimum return in terms of money may be very limited. There may be few projects which would be self-liquidating if financed by, say, a 20-year loan at 5 per cent. with repayment of capital spread over the life of the loan. (These are the typical terms on which the I.B.R.D. makes loans). But the question, as I understand it, relates to the amount of capital which could be absorbed, without waste, in expanding output or improving social conditions, irrespective of its money yield.

The belief that only a limited amount could be absorbed rests on the assumption that the administrative and technical staff of a government can plan and supervise only a certain number of projects without confusion and delays and waste; that only a certain number of trained workers are available for the various skilled and semi-skilled tasks required; that the existing transport systems can handle only a certain amount of traffic; and that housing, power supplies, water supplies, and other services are restricted in any given area.

But if unlimited capital were available free of charge, a country could draw on the resources of the whole world. It could import experts and skilled workers. It could engage foreign firms of consulting engineers to draw up plans and specifications and it could then put projects out to tender. This is being done by Burma, for example. If need be, a firm of foreign contractors could be given a free hand to bring in their own supplies (like an invading army): they could, for instance, build houses for their workers near the site of each project, construct roads to transport their materials and equipment, and feed their workers on imported food. By such means, very large amounts of external capital could be absorbed.

Of course this is a far-fetched hypothesis and, even so, the larger the number of countries adopting such a policy the more difficult it would be for the rest of the world to supply them all with the skilled workers, equipment, and materials which they needed.

Nevertheless my own view is that in practice it will be quite possible for the countries of this area to absorb all the external capital which can be provided. Their governments can use consulting engineers and private contractors and can import experts, and possibly skilled workers, meanwhile training more of their own workers.

IX

I turn to the question of whether the rate of return on capital is higher in this area than in western countries.

We cannot take it for granted that because capital is scarce relatively to labour the rate of return must be high. Most countries in this area suffer from three disadvantages. Their home markets are too small, in terms of purchasing-power, to support large-scale establishments, yet in some fields large-scale establishments are much more efficient than relatively small units. They can offer a new firm fewer external economies than more developed countries: they are relatively short of means of transport, power supplies, repair facilities for machinery, and so forth. Their workers are comparatively unskilled and therefore, despite low wages, labour costs tend to be high.

These disadvantages apply especially to manufacturing. They will become less as time goes on, for the development programmes will tend to expand the market (by increasing the agricultural surplus above the needs of the cultivators), to create some external economies, and to train more workers. Moreover, their extent varies between countries. It is obvious, to take an extreme example, that a modern integrated steel plant would not pay in Ceylon. But India is a large market, with rich iron ore and coking coal; there seems no reason why its steel output, at present around a million tons a year, should not substantially expand. It is somewhat disconcerting, however, that India can and does import locomotives considerably more cheaply than she produces them at the Chittaranjan plant (which cost at least £12 million); this situation may possibly improve as her workers become better trained.

The returns to capital employed in the more efficient estates and mines, producing in many cases for the world market, and employing most of their workers on tasks at which they can easily and quickly be trained to a fair standard of efficiency, are comparatively high.

Probably returns to capital would be high in the field of public utilities if private enterprise were given a free hand, allowed to confine its investment only to profitable areas, and permitted to charge monopoly prices. This, however, is against public policy; and over most of the area public utilities are owned and operated by governments or other public authorities.

In other fields of public investment we must distinguish between the direct money return to the government and the expansion of national output or social services. An irrigation project, for example, may bring about an expansion of output equivalent to a very high return on the capital investment, but the government may levy only low charges for irrigation water and may thus get only a low return in money revenue. For other projects which benefit land and increase its yield, such as flood control projects or measures against soil erosion, the government may levy no charges at all on the landowners or cultivators who benefit. The reason is doubtless a reluctance to impose burdens on the peasants, who are very poor. But if a project is worth while, the peasants receive substantial benefits; they could afford to pay enough to give the government a fair return on its investment and they would still be better off than before. There seems no good reason for subsidising, in effect, the cultivators who are fortunate enough to benefit from such schemes, at the expense of the general revenue. Governments need all the revenue they can get in order to improve economic and social conditions.

Education is usually subsidised by the government. But in the Philippines it is largely left to private enterprise, and it is a curious fact that in that country private investment in schools, universities, and other educational institutions yields a high return, revenue being derived entirely from fees.

It is possible that a good deal of private investment, for example in trading enterprises, service industries, and some types of manufacturing, involving relatively simple processes, would yield a high return if the management were given a free hand; the average returns to such private investment in Malaya, British Borneo, and Hong Kong are fairly high. But the foreign investor is still rather wary of tying up his capital in the East. There is the risk of war or revolution or other disturbances: his property may be damaged or confiscated. There is the risk that the government may depreciate the currency, or impose special taxes on foreign capital, or block his profits, or control his prices, or compel him to employ a number of their nationals in managerial posts, and so forth.

Most governments in the area have attempted to allay these fears. They have declared that they will not discriminate in any way against foreign capital, and that both profits and capital can be remitted back freely; and some of them are offering special inducements, such as tax reliefs and generous depreciation allowances, to new private investment in approved fields.

Nevertheless, the general feeling in most countries of the area is that they are doing private external capital a favour by allowing it to enter, and that foreign firms should allow local capital to participate, should employ local personnel in some or most of the higher-paid posts, and in general should assist the government in its policies. The foreign investor, who can get a fairly high return in his own country without the political and security risks of investment in the East, is often not attracted; and so far the inflow of private external capital has not been very large. It is possible that various devices, such as participation with governments in specific undertakings, and insurance provided by the governments of the investing countries against certain risks, may give it some stimulus.

My general conclusion is that on the whole yields are higher than in western countries, although in some fields this applies to returns in terms of national output rather than in terms of money, and that yields in general are likely to increase as more workers are trained and more external economics become available.

X

It is self-evident that a country can receive external aid only in the form of imports of goods or services[1]. If the aid consists of grants, the country never gives anything in return; grants are free gifts. If the aid consists of loans, the country gives nothing in return, and the lenders receive nothing in return, at the moment, but later on the country must provide exports to cover its interest payments and repayments of capital to the lenders.

There may be an interval between the time when a country is allocated a certain amount of money as external aid and the time when it draws upon this aid in the form of imports. There may be delay, due to the need to go through various procedures, before the money voted by the aid-giving country is actually made available; and the receiving country may for a time simply add the money to its foreign exchange reserves without drawing on it. I shall regard the receipt of aid as its receipt in the form of imports. How the aid is utilised is another matter. It is conceivable, for example that, owing to bad planning, imported machinery (representing external aid) may be left to rust on the factory site or may remain in its packing-cases; but it can be regarded as received when the corresponding imports arrive in the receiving country.

If a country's balance of payments is in equilibrium, the receipt of a given amount of external aid will show itself in a deficit of that amount in its balance of payments on income account. If the other items in its balance of payments offset one another, the amount of external aid which it receives over a period will be measured by the size of its import surplus during that period. If, on the other hand, a country requires an export surplus of say £$2x$ a year to cover interest and profits due to non-residents, then external aid of £x during a year will reduce its export surplus to £x, external aid of £$3x$ will give it an import surplus of £x, and so on.

Most of the countries in the area have external assets in the form of sterling balances. These balances are their own money, received in exchange for goods and services which they supplied to the United Kingdom in the past, mostly during the war. When they now draw on these balances, the United Kingdom naturally receives nothing in return, as the drawings are a repayment of its debts to these countries, but the resulting exports are a drain on its economy and therefore the rate of drawing is usually limited by agreement. A country which draws on its sterling balances will show a deficit in its balance of payments, other things being equal, to the amount of the external aid it receives plus its drawings on its sterling balances.

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[1] It is conceivable that a country may utilise external aid to withdraw labour from her export industries for local capital formation; in that event her total imports might remain the same, some of them now representing external aid rather than payment for exports. This possibility is unlikely, and I have therefore not complicated the argument with it.

Whether a country needs external aid, and whether it affords good investment opportunities, are questions which can be answered only by a study of its economy. The present state of its balance of payments is no criterion, and it is quite fallacious to suppose that a country needs external aid only if its balance of payments is in deficit. One country may live within its means, keeping its balance of payments in equilibrium, and yet may be poorer and also offer better investment opportunities than another which is running a deficit in its balance of payments. This point seems very obvious; I mention it only because it was imperfectly understood during the early discussions on the Colombo Plan. External aid can reach a country only in the form of a deficit in its balance of payments, but the deficit appears only when the external aid is received. To argue that a country does not need external aid if it has, at present, no deficit in its balance of payments is clearly nonsense; whether, and to what extent, a country needs external aid is a question for direct investigation.

XI

The imports arising from external aid need not take the form of capital goods. Much of the expenditure on developmental projects often consists of payments to local labour and other internal costs; payments made abroad for imports, such as machinery or equipment or building materials, needed for the projects may form only a minor part of their total cost.

Granted that external aid can be received only in the form of imports, the imports may largely take the form of consumer goods. Consumer goods may be needed to replace those which would otherwise have been produced by the local labour and other resources which have been diverted to capital formation, and to provide higher levels of consumption for workers formerly unemployed or under-employed.

Suppose that three-quarters of all developmental costs are internal.[1] Then a general restriction of external aid to the capital goods required from abroad for the various projects would limit external aid to one-third of the amount which the receiving countries could raise themselves from their own resources. But in periods of relative depression they might be able to raise very little themselves, and in consequence the pace of their developmental activity might be drastically slowed down.

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[1] The original estimates (Cmd. 8080, page 58) showed the total cost of the development programmes as £1,868 million, of which only £411 million represented the " cost of capital goods imported for the programmes ".

Loans by the I.B.R.D. are normally restricted to the foreign-exchange requirements for imports associated with the project for which the loan is made, and are not available to cover the internal costs of the project. This limits their usefulness except in cases where the borrowing country would in any event have raised and allocated resources of its own for the internal costs of that particular project.

A " tied " loan, which can be used only to purchase goods from the country making the loan, may have the further disadvantage that otherwise more suitable goods could have been obtained, or similar goods could have been bought more cheaply or with prompter delivery, from elsewhere.

It follows that a country would prefer to receive aid in the most generalised form, namely in the form of cash which it was free to spend either on internal costs or on imports of whatever types it needed from whatever sources offered it the best terms. The next most convenient form would be commodities (such as the wheat provided by the United States to India and Pakistan) which could readily be sold on the local market, giving rise to " counterpart funds " in local currency which could be used as the government wished.

The mechanism by which such aid would give rise to imports is simple. A government receiving cash, in the form of foreign exchange, could sell to importers whatever amount it did not need itself, using the proceeds for its local expenditure. The importers would import whatever goods, whether capital goods or consumer goods, were likely to sell and would import them from wherever they could be bought most advantageously.

The contributing countries, however, have their own difficulties. Suppose that a government wishes to make a grant to a country under the Colombo Plan. It has to persuade its Parliament to agree, and to ensure the general approval of its people. This may not be easy in the face of demands for public expenditure at home which it has not the resources to satisfy.

The best way to arouse and maintain public interest in helping the development of this area may well be for a country to take a particular project under its wing, supplying the equipment and materials required, as far as possible, from its own industries and perhaps providing also some of the experts needed to supervise the project.

It is true that this procedure may cause some inconvenience to the receiving country. It may take some time to find projects which both fit into its general development plan and are suitable for the contributing country to sponsor. Various difficulties may arise: for example, the types of equipment supplied by the latter may be types with which the engineers of the receiving country are not familiar. But all such difficulties can be, and in fact are, smoothed over by sympathetic understanding and compromise on both sides.

Broadly speaking, the contributing countries are somewhat reluctant simply to hand over money without any safeguards to ensure that it will be spent on the general purposes for which it was provided, and will be spent wisely. This partly accounts for the " specific projects " approach, and for schemes of technical assistance administered by the contributing countries. Some countries in the area are not entirely free from graft; and some have made mistakes (although none comparable in size to the Tanganyika groundnuts scheme) in their planning or in their execution of certain projects. On the other hand, the receiving countries are jealous of their independence and tend to resent interference. This again is a situation which calls for, and receives, tact and goodwill on both sides.

XII

The Colombo Plan may be running into difficulties. The terms of trade of the area have swung back to around where they were before the boom. The reserves accumulated during the boom have largely been used up. Public revenues, despite efforts to improve the collection of taxes, are far below needs.

The money costs of the various projects have risen substantially. This is due largely to higher money wages and other internal costs, which remain near the levels to which they rose during the boom. It is due partly to higher prices for imported capital goods; for example, the U.K. index of export prices of metals and engineering products is over 20 per cent. above its 1950 level.

In this area, as elsewhere, it is politically difficult to reduce money wages. However, India and Ceylon have virtually abolished their food subsidies and Ceylon (who had been living beyond her means) has cut out items of public expenditure such as free meals for school children.

The need for developmental expenditure is imperative. It is the only means by which standards of living can be maintained as time goes on, let alone increased, in face of the growing populations. Yet even the present modest targets, of public developmental expenditure equivalent to some 3 per cent. of national incomes, are in danger.

In these circumstances some governments have turned to deficit financing as a solution. They may obtain from their citizens loans which otherwise would have been spent on their private consumption. Their deficit expenditures may be matched by increases in output due to bringing into useful employment labour and other resources formerly unemployed or underemployed. But there is clearly a danger that deficit financing may exceed the limits beyond which it gives rise to inflation, imposing hardships on the mass of the people, and possibly leading to distrust of the currency, reduced willingness to save, and some distortion of the economy. All who have the welfare of the area at heart will anxiously watch the course of events, hoping that enough deficit financing can be carried out without appreciable inflation.

Although the original Colombo Plan figures have now gone by the board—plans and priorities have been revised, costs have risen, other countries have joined—it is relevant to note that it was realised from the start that nearly half the finance required would have to be provided by external aid.[1] Today the need for external aid is greater than ever.

Singapore.

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[1] The total expenditure on the programmes was estimated at £1,868 million. (India £1,379 million, Pakistan £280 million, Ceylon £102 million, Malaya and British Borneo £107 million). It was estimated that external aid of £839 million would be required plus releases of £246 million from sterling balances.

Dichotomies of the Pricing Process in Economic Theory

By Don Patinkin

In a recent paper it was argued that classical economics attempted " to dichotomize the economic processes of a monetary economy into a real sector, dependent upon and determining relative prices, and a money sector, dependent upon and determining absolute prices ". In the event that the operations of the latter sector are described by the quantity theory of money, such a dichotomization is involved in a logical contradiction. Specifically, the classical quantity theory " attribute[s] a fundamental role to the effect of real cash balances on demand, for this effect is the vehicle by which . . . a change in the amount of money [is presumed] to influence the absolute price level " ; on the other hand, the assumption that the demand function depends only on relative prices " implies that [demand] is independent of real cash balances ". The assumption of Say's Identity does not remove this contradiction.[1]

Abandoning the quantity theory of money does not resolve this difficulty. For the assumption that commodity demand functions depend only on relative prices is inconsistent with any monetary theory which attempts to make money prices determinate. This can be seen simply in the following way: Consider an economy in which excess demand depends only on relative prices, and assume it to be in equilibrium at a certain set of money prices. Assume now that all money prices are changed in the same proportion. This does not change relative prices. Hence, by assumption, the commodity markets are still in equilibrium. By Walras' Law, so must the "money market" be. Thus the proportionate departure of money prices from any given equilibrium level creates no market forces—i.e., creates no excess demand anywhere in the system—which might cause money prices to return to their initial level. That is, if the system is in equilibrium at a given set of absolute prices, it will remain in equilibrium for any multiple of this set. Once again, the assumption of Say's Identity does not remove this difficulty.[1]

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[1] This paragraph summarises the material of [34], section 3, and p. 149, note 30. The latter has been used here to give a common-sense economic explanation of " Invalidity I ", proved mathematically in the former. The first passage quoted in this paragraph appears *ibid.*, p. 134. The last two are from p. 149, note 30.

In order to avoid any possible confusion, I am using the term " Say's Identity " to describe what has until now in the contemporary literature been called " Say's Law ". The former term is proposed by Becker and Baumol in order to distinguish it from what they call " Say's Equality " ([1], pp. 360—1).

Actually, " Say's Equality " is equivalent to the proposition that the dynamic structure of the economic system is such that a full-employment equilibrium position can always be reached through the smooth and automatic functioning of market forces. For a detailed analysis of this proposition see [33], particularly section 14, and [31], particularly Parts IV and V. In these references it is emphasised that it is this proposition, and not Say's Identity, which constitutes the logical essence of the classical position. This point is also made in [34], note 29. In this connection, Becker and Baumol bring several interesting passages from the literature which suggest that at least some of the classical economists explicitly thought in terms of this proposition; see [1], Section IX.

Fortunately, it is possible to avoid both these difficulties and to reconstitute the classical theory by explicitly making the commodity demand and supply functions dependent upon the amount of real cash balances held by the individuals of the economy. In this way the absolute price level, which affects the level of these real balances, appears in every excess demand function, so that the preceding dichotomy necessarily vanishes. On the other hand, the form of the commodity demand function now becomes consistent with and explicitly reflects the basic assumption of the classical quantity theory of money. Furthermore, the familiar propositions of classical monetary theory can be proved rigorously: in particular, a change in the quantity of money, in this "modified classical system", changes prices proportionately, and leaves the rate of interest unaffected.[2]

Further reflection along these lines shows that demand functions which are not affected by a proportionate change in prices "are appropriate only for non-monetary economies, those in which money does not exist as a commodity but serves merely as a formal unit of account". More generally, they are appropriate for an economy in which there exists one money which serves as a physical medium of exchange (say, the shilling) and another which serves as an abstract unit of account (say, the guinea)—provided that the proportionate change takes place in guinea prices. By definition, in neither case will such a change affect the real value of cash balances held; hence, in neither case will such a change affect behaviour. Correspondingly, as the argument two paragraphs above shows, in neither case are there market forces which will bring the economy to one definite level of accounting prices.[3]

[1] This paragraph summarises and gives an economic explanation of alternative (*c*) of Invalidity II, proved mathematically [34], section 4. The method of reasoning is borrowed from Wicksell [41], pp. 23–4.

There is, however, one loophole in the argument. If only the money and bond equations are affected by real balances, then we shall have the case described in [30], p. 22. A full discussion of this case must be deferred to a later occasion ; cf. below, p. 117, note 2, last paragraph.

For convenience, the difficulties described in the two preceding paragraphs will be referred to in what follows as the "dichotomization fallacy". We shall also make use of the terms "dichotomization issue" and "dichotomization charge".

[2] The "modified classical system" was first set out in [30], section 14. It was analysed in greater detail in [32].

[3] I.e., prices in terms of the unit of account. It is clear that the change discussed in this paragraph also leaves relative prices and real incomes constant.

This paragraph summarises the discussion in [34], pp. 147, 149–51 and [32], section 1. The quotation is from [34], p. 149. Cf. also [29], pp. 148–9.

The preceding paragraphs summarise the results of a discussion whose first stage is represented by Lange's wellknown 1942 article.[1] Lange attributed to classical economists the assumption of Say's Identity, and based his criticism solely on these grounds.[2] In two later articles,[3] I continued Lange's investigations, but based the criticism on the assumption of price homogeneity alone.[4] It was also argued that this assumption was a consequence of the failure of classical economists to attribute to money " direct " utility and put it in the utility function. On the other hand, the argument in the critical sections of these articles indicated no explicit recognition of the relationship between price homogeneity and the effect of real balances on demand.[5] A third stage in this discussion consisted of a subsequent group of critical articles, and a restatement by the writer of the charge against classical economists in the form summarised above.[6] An important contribution to this stage of the discussion was the demonstration by Brunner and Fort that the issue of money in the utility function was completely independent of the dichotomization issue.[7]

This " historical " digression has been presented for the sole purpose of showing that any careful and accurate survey of the dichotomization discussion must necessarily distinguish between the three stages just delineated. Or, at least, any criticism which purports to deal with " the outcome of the discussion " must—if it is to be relevant to this " outcome "—be based on the understanding that the criticism of classical economics at the third stage of the dichotomization discussion was not the same one with which it had begun, nor even the one to which it had developed at its second stage. It is precisely in this respect that Becker and Baumol's recent attempt to present " a summary of the results of the discussion " is seriously deficient.[1]

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[1] [15].

[2] Actually Lange claimed at one point that demand curves could not depend solely on relative prices ([15], p. 66, bottom). But he later withdrew this claim and " conceded " to Modigliani that a dichotomized system, without Say's Identity, could be consistent and determinate. See [25], p. 217, note 35.

[3] [29] and [30].

[4] I.e., the assumption that demand depends only on relative prices.

Despite the insistence here that for the purposes of the present discussion we must distinguish between Say's Identity and price homogeneity, it should be pointed out that these two assumptions are in a certain sense formally equivalent. Each implies the existence of a non-monetary economy; and in such an economy both must simultaneously hold. (Cf. the development in [29], section 4. The argument just presented rejects the distinction between macro- and micro-economics made *ibid.*, pp. 153–4, and [34], note 17.)

The reason this equivalence cannot be used in what follows is that its demonstration presupposes full recognition of the impossibility of dichotomization in a monetary economy: but this is precisely the problem in question. See below.

[5] See in particular [30], section 10.

[6] See Hickman [12], Leontief [18], Phipps [36], Brunner [4], Patinkin [32] and [34].

Two further comments have since appeared. See Hahn [11] and Patinkin [35]. But for reasons which will soon become apparent, these are largely excluded from the present discussion.

[7] [4], section IV. This was explicitly conceded in [32], p. 45, note 2; and [34], note 28.

Becker and Baumol do not disagree with the substantive conclusions summarised in the opening paragraphs of this paper. Instead, their interest is almost entirely in the history of doctrine. Their purpose is to show that an examination of the writings of classical and neo-classical economists refutes the dichotomization charge made against them. Indeed, Becker and Baumol attempt to demonstrate that classical and neo-classical economists *explicitly* made the assumptions of the " modified classical system "; and that, in particular, the role of real balances in demand theory was *explicitly* recognised.[2]

Unfortunately, the failure of Becker and Baumol to note the changes in the nature of the dichotomization issue has rendered most of what they have written irrelevant to this issue in its final form. Specifically, of the sixty-odd citations to the literature which they bring, only two or three actually bear on the issue in the form it existed at the time they wrote. Of the remainder, some are relevant only to the second stage of the discussion. Some are relevant only to the first. And some are not relevant to any stage whatsoever.[3]

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[1] [1]. The quoted words in the preceding sentence are taken from the title of their paper; those in this sentence, from its second paragraph ([1], p. 355). Becker and Baumol's survey includes all the papers listed on p. 115, notes 3 and 6, and in note 2 below, except for [11] and [35]. These two apparently appeared too late to be included.

[2] The emphasis is essential. For if Becker and Baumol merely intended to say that the " modified classical system " has classical attributes, they would not be saying anything that has not been vigorously and insistently emphasised from the very first time the " modified classical system " was introduced. See [30], pp. 2, 23, 26; [34], section 5, and, in particular, p. 149, note 30; [32], pp. 42, 52–55, 60–1. Note in particular the passage in [30], p. 26, which, after the initial presentation of the " modified classical system ", remarks that " in this way . . . it is possible to reconstitute the classical theory. As frequently in such cases, once the reformulation is completed, it is possible to go back to the texts and show that it is really closer to what the original propounders had in mind."

[3] The references to Becker and Baumol's article on which this paragraph is based are as follows:

Second sentence of paragraph: The reference is to their citations from Wicksell (p. 370, notes 1 and 2). These are discussed further below.

Third sentence of paragraph: The reference is to the citations on the utility of cash in Section VI of their article, and to the citations in Section VIII. The irrelevance of the latter is explained in the next paragraph of the text. The irrelevance of the former for the last stage of the discussion has been emphasised above. This is not to deny the useful service Becker and Baumol have performed in clarifying and emphasising the classical position on this matter. This is particularly so in view of its incorrect presentation in my first article [29], and the absence of any further discussion of this point in later articles. Nevertheless, in an article purportedly based on " the outcome of the discussion " it should have been explicitly pointed out that the utility-of-money issue was irrelevant to the dichotomization charge in its final form.

Fourth sentence of paragraph: The reference is to the citations on Say's Identity in Section IX. Their irrelevance is clear from the opening paragraphs of this article: Say's Identity is mentioned only for the purpose of showing that it does not remove the difficulties which follow from the assumed dependence on relative prices alone. Once again there is no doubt that Becker and Baumol's discussion here is stimulating, important and relevant as a possible refutation of Lange's criticism. Furthermore, it should be pointed out that at one point (p. 360, note 1, last paragraph) Becker and

Thus, consider Becker and Baumol's attempt to present in Section VIII of their article citations which allegedly prove that classical and neo-classical economists correctly and explicitly dealt with the dichotomization issue. Inspection of these citations show that not one of them is actually relevant to this issue in its final form. For each of them merely shows that in their discussion of monetary theory—and the quantity theory in particular—classical and neo-classical economists emphasised the effect of real balances on demand. This fact may, indeed, be relevant as a refutation of the dichotomization charge in the form it took at the second stage of the discussion. But at the time that Becker and Baumol wrote, this fact had already been explicitly (though, admittedly, belatedly) recognised, and the dichotomization charge had been refined to take it into account. This can be readily seen from the opening paragraph of this paper. Specifically, the charge in the third stage of the discussion was " not that it [i.e. classical economics] fails to recognise the effect of real balances on quantities demanded, but that it fails to do so *consistently* " ; i.e. it fails to carry over recognition of this effect from monetary theory to demand theory. On the charge in this final form, Becker and Baumol's discussion sheds no light.[1]

Nevertheless, Becker and Baumol's Section VIII does accomplish one purpose. It shows that the passages from Wicksell which had been adduced in support of the dichotomization charge are really irrelevant to this charge; for they deal with a non-monetary economy. It can also be shown that the passages from Cassel are similarly irrelevant. Hence a reconsideration of the evidence is in order.[2], [3]

Baumol explicitly recognise that my criticism is independent of Say's Identity. This makes it all the more difficult to understand why in Section II—a section entitled " The Classical System according to Lange and Patinkin "—this point is completely ignored. Instead, this section presents the criticism of classical economics as if it were vitally dependent on the assumption of Say's Identity. With the exception of its third paragraph (which is not relevant for the present discussion) this Section II is a perfect summary of Lange's—and only Lange's—criticism. Its title notwithstanding, it certainly does not reflect my own.

Last sentence of paragraph: The reference is to the citations on p. 367, note 3. In this footnote Becker and Baumol are clearly using " dichotomization " in a sense completely different from that used throughout the discussion. For the question of whether or not classical economists treated the determination of the value of money like the value of any other commodity tells us nothing about their position on whether or not commodity demand functions depend on the absolute price level.

[1] The quotation is from [34], p. 149, note 30, italics in original. The reader may note the great weight that has been given to this footnote here and in earlier parts of this paper. Clearly, it would have been better if the contents of this footnote had been included in the text. Nevertheless, I feel that this weight is warranted by the emphatic and unequivocal way in which this footnote is formulated. In any case there can certainly be no justification for Becker and Baumol's failure to take it into account at any point in their survey. This is particularly so since they do refer to it explicitly in another context. See [1], p. 369, note 7.

Justification for distinguishing so sharply between monetary and demand theory is presented in the discussion below.

[2] [1], p. 370. See above, fourth paragraph of paper. Becker and Baumol accept the evidence against Cassel; cf. *ibid.* However, it can be shown that the passage cited from Cassel in [30], p. 12, note 5, also deals with a non-monetary economy. For this passage appears in Book I of Cassel's work, and this Book assumes

It should be made clear at the outset that classical economists, proper, have never been accused of the dichotomization fallacy. Indeed, I have not been able to find any passages in the classical literature, proper, which deal explicitly with this issue one way or the other. Hence the following discussion is restricted to the writings of neo-classical and contemporary economists.[1]

Let us first see what type of statement constitutes a substantiation of the dichotomization charge. Some possibilities—equivalent from the viewpoint of economic analysis—are as follows:

(1) A statement that relative prices are determined by the excess demand equations for commodities, and that absolute prices are then determined by the excess demand equation for money;

(2) a statement that, *in a monetary economy*, the excess demand functions for commodities depend only on the ratios of commodity prices;

(3) a statement that, *in a monetary economy*, a proportionate change in all commodity prices is of no real significance and, in particular, does not affect the excess demands for commodities.

The difficulties of textual interpretation begin when we attempt to find examples of the above three statements in the literature. For each of these incorrect statements is superficially similar to another statement which is correct! And in many cases it is impossible to tell which of the statements the writer had in mind.

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throughout that money functions only as a pure unit of account. Cf. Cassel [5], pp. 46–7, 50, 383, and 440.

The irrelevance of the passage from Wicksell was first brought to my attention by a letter from Professor D. H. Robertson in the summer of 1951. A re-reading of Cassel then showed me that I had also misinterpreted him. On the basis of these and other considerations I then stated that " it would be an interesting study in the history of monetary doctrines to determine to what extent, if any, classical economists" were guilty of the dichotomization charge ([35], p. 192). As indicated above, this article was apparently published too late to be taken account of by Becker and Baumol.

The material which forms the remainder of this paper will be included in a book on the general equilibrium theory of money on which I am now working.

[3] Before getting into the main issue of this paper, I should point out another serious omission in Becker and Baumol's paper. This occurs in Section IV. Here they completely ignore the detailed and explicit discussion of the role of bonds in a monetary economy presented in sections 2–5 of [32], as well as the earlier treatment in section 14 of [30]. Instead, they refer only to p. 19 of the latter article, and attribute to me a view quite explicitly presented there as that of Lange. See [1], p. 363, note 1.

Furthermore, the substantive analysis of this section is also incorrect. This can be demonstrated most easily by comparing it with that of [32]. Becker and Baumol fail to see that they are tacitly assuming money illusion to be present in their exchange economy. Again, the statement on p. 363, note 2 is incorrect; cf. [32], section 5(*b*).

[1] In earlier articles and up to this point in the present one, I have incorrectly used the term " classical " to describe economists who were actually members of the neo-classical school, or are even contemporaries. Following Baumol's suggestion, I shall henceforth in this paper use this term in its accepted sense (viz., Smith, Ricardo, Mill and contemporaries). I hope that this usage will help clarify the nature of the issues in question.

This ambiguity is particularly noticeable in connection with the first statement. As has been pointed out elsewhere, the following dichotomy is correct: Equilibrium relative prices and real cash balances are determined by specifying the forms of the excess demand equations of all markets (i.e. both for commodities and money[1]) and the stocks of physical assets; the absolute price level is then determined when, in addition, the nominal amount of money in the economy is specified.[2]

Consequently, a general statement that " relative prices can be determined independently of money prices " or that " relative prices and money prices are determined by different processes " can be correct or incorrect, depending on which type of dichotomization is intended. Similarly, a statement that " money prices are then determined by the monetary equation " is correct if " monetary equation " is intended to refer to the specification of the nominal amount of cash balances; it is clearly incorrect—and an example of the first type of invalid statement listed above—if it is intended to refer to the excess demand equation for money.

Similar difficulties arise in connection with the second and third statements listed above. As pointed out in the fourth paragraph of this paper, each of these is correct if the italicised phrase is removed, and the statement made for an economy in which money is a pure unit of account. Or, what is equivalent, the third statement is correct if the statement is made for the case in which the proportionate change in prices is accompanied by a proportionate change in the amount of money.[3]

In the light of the preceding distinctions, one can readily appreciate that, except in the case of writers who explicitly and precisely stated their assumptions and propositions, it may be difficult to determine with certainty the truth—or lack of truth—of the dichotomization charge. Nevertheless, a re-examination of the literature from the framework of the preceding discussion—the task to which we now proceed—establishes, in the view of the writer, strong grounds for suspecting such economists as Fisher, Cassel, Marshall and Pigou of the dichotomization inconsistency; and somewhat weaker grounds for suspecting Wicksell. For convenience—and in the hope that this does not do violence to the accepted meaning of the term—these economists will be referred to in what follows as members of the " neo-classical school ".

Consider first the following statement from Wicksell:

> . . . one thing is certain: *money prices, as opposed to relative prices, can never be governed by the conditions of the commodity market itself* (or of the production of goods); it is rather in the relations of

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[1] Obviously, that for money is not an independent datum: by Walras' law, it is automatically determined when the commodity equations are specified.

[2] For an explanation see [35], section 5. Space limitations prevent a complete presentation of this point and its implication. This must be deferred to the work described in note 2, p. 117 above.

[3] For convenience I am considering in this paragraph an economy without bonds.

> this market to the *money market*, in the widest sense of the term, that it is necessary to search for the causes that regulate money prices.[1]

From the context there can be no doubt that Wicksell is here considering an economy in which money is a physical good, serving also as a store of value. Yet the first italicised clause clearly implies that for such an economy relative prices *can be* " governed by the conditions of the commodity market itself ". If by this last phrase Wicksell means the excess-demand equations for commodities—and that is what he appears to mean—then he is clearly guilty of the inconsistency charged. If, however, he means the quantities of initial physical assets, he is not.

Consider now the following passage from Fisher:

> . . . there are always just one *too few equations* to determine the unknown quantities involved [i.e. money prices. At this point Fisher gives a footnote reference to [8], p. 62]. The equation of exchange is needed in each case to supplement the equations of supply and demand.[2]

This passage seems to indicate quite clearly that Fisher considers money prices to be determined by adding the excess demand equation for money to the excess demand equation for commodities. In Cassel[3] and Pigou[4] we also find passages which state that money prices are determined by what is the equivalent of the Cambridge equation. None of these passages, however, provides conclusive evidence in support of the dichotomization charge, since none of them explicitly states that relative prices have been determined in the commodity sector alone. On the other hand, none of them indicates that the process by which relative prices are " determined independently "[5] also determines the equilibrium level of real balances. Hence there is no definite proof that these writers had the correct type of dichotomization in mind.[6]

[1] [41], p. 24. First set of italics added.

[2] [9], pp. 174–5. Italics in original. Supporting evidence that Fisher did not have a clear conception of the dichotomization issue is provided by the reference that he himself gives in the passage cited here in the text. For in [8], p. 62, Fisher does not determine money prices by adding the equation of exchange, but by specifying the price of money in terms of the unit of account! In other words, Fisher seems to be confusing here the correct and incorrect methods of dichotomizing the pricing process.

[3] [5], pp. 456–7. A comparison of this discussion with the earlier one on p. 155 (and, possibly, p. 383 as well) seems to indicate that Cassel might also have confused the two types of dichotomization. But the evidence is not as clear as in the case of Fisher.

[4] [37], p. 174.

[5] *Ibid.*

[6] In an earlier draft of this paper, Fisher's discussion in [9], pp. 176 (line 10 from bottom)—177 (line 2 from top) was cited in full as " a clear example that leaves no room for doubt " that Fisher was guilty of the dichotomization charge. In a letter to the writer Baumol rejected this evidence, and claimed that Fisher was here considering a doubling of the price level which had occurred as a result of a change in the quantity of money. Consultation of Fisher's treatment of this question in another of his works ([7], p. 274) convinced me that this was, indeed, the case. For here Fisher explicitly discusses the effect on demand of a " change [in the] monetary unit " which causes a proportionate change in prices. Hence this discussion was deleted from the final draft.

I am indebted to Baumol for catching this error and calling it to my attention.

Further evidence arises in connection with the traditional proposition that the demand for money has unitary elasticity.[1] For some writers, this was merely a complicated way of saying that an increase in the amount of money causes a proportionate increase in prices. As such, the statement is unobjectionable, though it should be pointed out that the term " elasticity " is, in this case, being used in a sense different from the usual Marshallian one.[2] However, other writers meant something more by this statement. They explicitly referred to the demand curve or schedule for cash holdings that was implied by the cash-balance approach, and stated that this curve was a rectangular hyperbola, with unitary (Marshallian) elasticity. Statements of this sort were explicitly made by Marshall,[3] Pigou,[4] and Cassel.[5]

Now, it has been shown that this proposition is incorrect.[6] The argument can be simplified as follows: According to the cash-balance approach, the demand schedule for money is $M^d = KPT$—where M^d is the stock of money demanded. Clearly, T depends at least in part on the real amount of goods individuals plan to purchase, or on the real income they plan to receive, during a given period. This would also seem to be Marshall's and Pigou's view.[7] Consider now a change in P. This can cause a proportionate change in the amount of money demanded (i.e., unitary elasticity) only if K and T remain constant. But an immediate implication of having commodity excess demand functions depend on real balances is that T *cannot* generally remain constant! For a proportionate change in all prices will affect real balances, and hence will change both planned purchases and planned receipts, so that T must also change. In other words, the elasticity of demand for money is not, in general, unitary.

What is of interest here is not so much the error itself, but the way in which it originated. Specifically, a statement that the demand for money has unitary elasticity would seem to imply that commodity demand functions are not dependent on the absolute price level, so that a change in P leaves T unaffected. But, once again, the evidence is not conclusive: The missing link is the failure of Marshall, Pigou, and, *a fortiori*, Cassel, to tie up as explicitly as might be desired the variable T with planned purchases and sales[1], [2].

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[1] For references see Marget's discussion in [21], v. 2, pp. 644–63.

[2] To use the terminology of [32], section 6, " elasticity " in Marshallian economics measures the outcome of a *ceteris paribus* experiment; whereas, in the statement brought in the text, it measures the outcome of a *mutatis mutandis* experiment in comparative statistics. (This terminology is not particularly good and will be changed.)

[3] [24], Appendix C. Note that the only distinction that Marshall draws between the demand curve presented in this appendix, and an ordinary one, is that the one of the appendix is a demand for a stock, and not for a flow. Note also the reference at the end of this appendix to Marshall's discussion of demand curves in his *Principles* [23], pp. 388 ff.

[4] (37), p. 176, lines 16–18; p. 190, second paragraph, lines 4–8. See also [38], p. 165.

[5] Cassel [5], pp. 456–7.

[6] [35], section 4, second paragraph. But there does exist unitary elasticity of demand with respect to a proportionate change in prices *and* initial holdings of bonds and money. This is a consequence of absence of money illusion. See [32], pp. 50–1.

[7] Marshall [24], p. 45, lines 3–5. See also *ibid.*, p. 44, lines 15–20. Pigou [38], p. 174, lines 12–26; [37], p. 175, lines 6 ff. from bottom of page. But on the very next page (lines 10–12) Pigou refers to T (R in his notation) as the amount of goods physically available to the economy. See also [38], p. 166. Cassel seems to use T only in this latter sense ([5], p. 450, line 1).

At this point the reader may well be asking himself: Since classical and neo-classical economists definitely did assume in their monetary theory that real balances affect demand; and since it is obvious—once it is pointed out—that such an assumption is inconsistent with the assumption that commodity demand curves depend on relative prices alone; and since the evidence in support of the dichotomization charge, though suggestive, is not definitive—in view of all these facts, is it not being hypercritical to continue to suspect neo-classical economists of having failed to take into account in their demand theory what they made so explicit in their monetary theory?

The best way of dealing with this question is by setting up and testing the following hypothesis: Conscious recognition (as evidenced by the written word) of the role of real cash balances in monetary theory is accompanied by conscious recognition of their role in the theory of demand. " Empirical " evidence in support of this hypothesis can be provided by citing economists who make it unambiguously clear that the theory of demand in a monetary economy must provide for the influence of the absolute price level on demand. " Empirical " evidence against this hypothesis can be provided by citing economists who simultaneously refer to the quantity theory or the determinacy of money prices, on the one hand, and to the dependence of demand on relative prices alone, on the other—without pointing out the contradiction.[3]

It may be that an examination of the literature will yield contradictory evidence on this hypothesis. But surely we should not be justified in accepting it unless it could be shown that at least in a significant number of cases economists have indeed thought in the manner ascribed to them by this hypothesis. This is precisely what has not yet been done. As against some suggestive passages in Wicksell[4] and Fisher[5] there are other, suspicious ones, mentioned above which prevent these two economists from being cited as evidence in support of this hypothesis. Indeed, the only writer whom I have so far found who might possibly be so cited is Simon Newcomb. Newcomb consciously integrates his monetary theory with his demand theory, carries out his analysis of the former in terms of the latter, and explicitly states that the demand function in a monetary economy is not affected by a proportionate change in the amount of money and prices.[1] On the other hand, Newcomb's discussion is deficient in failing to distinguish sufficiently, if at all, between money, considered as an income flow, and money, considered as a balance.[2]

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[1] Interestingly enough, Becker and Baumol are themselves not completely free from error on this point. Cf. [1], p. 360, lines 3–4. More generally Becker and Baumol's discussion in this paragraph follows my erroneous treatment in [32], section 4. Hahn [11], section II, first pointed out that this discussion was in error. For further discussion see [35], section 4.

[2] Following Baumol (cf. above, p. 120, note 3), one might also question the evidence brought here on the grounds that the economists in question were discussing elasticity with respect to a proportionate change in prices *and* the amount of money. (See p. 121, note 6, above). I do not believe such a defence is possible in all cases. Unfortunately, space limitations prevent further discussion of this point here.

[3] The reason for the somewhat complicated formulation of the problem followed in this paragraph is made clear below, p. 123, note 5.

[4] [41], pp. 39–40. This is the passage I referred to in [34], p. 149, note 30. It is the same one brought by Becker and Baumol [1], p. 370.

[5] [7], pp. 274 ff. Cf. above, p. 120, note 3.

Consider, now, the evidence against this hypothesis. At present, this is overwhelming. It is instructive to examine it in detail. Divisia explicitly stated that relative prices are determined by the excess demand equations for commodities, and that the absolute price level is then determined by adding on the equation of exchange.[3] Marget later endorsed Divisia's treatment of this problem as " superior to that of Pareto " and " in all essentials identical " with that of Walras.[4] Rosenstein-Rodan, in his well known article on " The Co-ordination of the General Theories of Money and Price ", wrote:

> The whole classical theory was a theory of relative prices of a barter economy in a state of equilibrium. . . . But the system of relative prices thus obtained could obviously not be directly applied to and compared with the results of the real world. One equation—that determining the multiplicative factor which transforms relative into absolute prices—was still missing. The problem of monetary theory was to give this equation. The chapter thus added at the end was the quantity theory of money. . . .[5]

At about the same time, Leontief wrote:

> One of these fundamental assumptions [of classical economics]—that which Mr. Keynes is ready to repudiate—defines an important universal property of all supply and demand functions by stating that

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[1] [27], Book IV, section 17, and Book IV, Chapter IV, particularly last paragraph of section 22. Note the citation of Book III, section 17, in the first of these references. Note also equation (*c*) on p. 354, which is assumed to be homogeneous of degree zero in money and prices—as is clear from the accompanying discussion there.

[2] See *ibid.*, pp. 218–9, 380–87. In the first reference Newcomb states that a doubling of all prices will reduce the amount purchased, but seems to base his analysis on the effect of such a price rise on a fixed money income.

[3] [6], pp. 413–5. This has already been referred to in [30], p. 13, note 7.

[4] [21], vol. 2, p. 284, note 132.

This explicit endorsement of Divisia makes it clear that Becker and Baumol's implication that Marget was aware of and objected to the dichotomization inconsistency is incorrect and based on a faulty reading of the text ([1], p. 370, note 3).

[5] [39], pp. 257–8.

It must be emphasised that the relevance of this passage for the hypothesis under examination is not that Rosenstein-Rodan assumed that classical economists dichotomized the pricing process, but that he assumed this without recognising the internal contradiction of such a dichotomy. This observation holds also for the passages which follow.

> *the quantity of any service or any commodity demanded or supplied by a firm or an individual remains unchanged if all the prices upon which it (directly) depends increase or decrease in the same proportion.*[1]

This assumption he called the " homogeneity postulate ". This " postulate " was later reproduced, without objection, by Haberler.[2]

Hicks, in his *Value and Capital*, in a section entitled " The Traditional Dichotomy between Real and Monetary Economics ",[3] wrote:

> In the more developed versions of the quantity theory of money, where the money equation is used to determine the *price-level*, it must be supposed that the relative values of other goods and services are independently determined, the money equation being needed to determine their money values only.[4]

Marschak stated that " a necessary (though not sufficient) condition of rational behaviour " in the real world is that the individual does not change his consumption if his " income and all prices change in the same proportion ".[5] Lange assumed that the excess demand functions for goods are "homogeneous of zero degree in the prices of these goods".[6] Additional examples similar to the preceding can be found in Myrdal,[7] Modigliani,[8] Samuelson,[9] and Boulding.[10]

Each of these cases shows the possibility of an individual's simultaneously maintaining two contradictory propositions without realising it. Some cases are particularly illuminating. Thus, Lange devoted two complete chapters of his book to an examination of the effect of changes in real cash balances on the demand for goods, and yet specified a form for the excess demand function which precludes the existence of such an effect. Haberler was one of the first to introduce the " Pigou effect "[11] into Keynesian models, and yet he reproduced, without comment, a " postulate " which is the exact antithesis of this effect.[1]

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[1] [16], p. 192, italics in original. This has already been referred to in [34], p. 149, note 29. From the context it is clear that Leontief is talking about ordinary money prices, and not prices in terms of an abstract unit of account. Leontief repeated this interpretation later in [17] and [18].

[2] [10], p. 460, note 1.

[3] [13], p. ix, heading for section 5 of chapter XII.

[4] *Ibid.*, p. 158, italics in original. From the context it is clear that Hicks assumes relative prices to be " independently determined " by the commodity equations alone.

[5] [22], p. 40.

[6] [14], p. 99. This has already been cited in [30], pp. 18–9.

[7] [26], p. 12, lines 3–8.

[8] [25], section 13; already cited in [30], p. 12, note 6.

[9] [40], p. 121. Note that Samuelson indicates that prices need not be measured in terms of a pure unit of account (*ibid.*, p. 119, lines 7–8 from bottom). Note also references to unitary elasticity of demand and to Marschak's article mentioned above.

[10] [2], pp. 28–9.

[11] Having had the dubious honour of coining this term, I should like to take advantage of the present opportunity to acknowledge the justified criticism of its ineptness, and to suggest its replacement by the term used throughout this paper: namely, " real balance effect "; or, more generally, " asset effect ". Either of these terms is more appropriate for a concept that, as Haberler has emphasised, is not at all new, but is " inherent in the classical position " ([10], p. 498, note 3). Nevertheless, the example of Haberler himself—brought here in the text—should make clear the danger of assuming that that which is " inherent " was also explicitly recognised, with full realisation of its implications.

Using this terminology, we could then distinguish in our demand analysis between substitution effect, income effect, and asset effect. Further discussion of this point will be provided in the work referred to in note 2, p. 117, above.

From all these examples one clear conclusion emerges: Explicit recognition of the effect of real balances in monetary theory cannot be accepted as *prima facie* evidence of such recognition in demand theory. In brief, the preceding hypothesis must be rejected.

The persistence of this error calls for some explanation. As suggested elsewhere, the origin of the dichotomization fallacy is probably in an erroneous identification of a proportionate change in prices with a change in the monetary unit which is permitted to work itself out.[2] What this identification overlooks is that only in the latter case do real balances—and hence, demand—remain constant. This error was undoubtedly abetted by a confusion of the two types of dichotomization, by the fact that dependence of demand on relative prices alone does exist in a non-monetary economy, and by the general tendency of economic analysis to concentrate on flows, to the neglect of stocks.[3]

Lest this lengthy—though incomplete—examination of the literature create a misleading impression, it is advisable to conclude by re-emphasising what has been emphasised from the beginning of this discussion: In principle the error of which neo-classical economists are charged, is a serious one, as must be any logical inconsistency; but, from the pragmatic viewpoint, it is a completely inconsequential one. For even if the fallacy exists, it can be corrected entirely within the classical and neo-classical structure. Indeed, the correction consists of explicitly introducing into the commodity demand functions the real balance effect of the classical quantity theory of money. Furthermore, one of the main advantages which has been repeatedly claimed for the resulting " modified classical system " is that it enables us to prove rigorously the fundamental propositions of classical and neo-classical monetary theory.[4]

* * *

The conclusions of the present discussion can be conveniently summarised in the following propositions:[5]

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[1] [10], pp. 242, 389, 403, 491–503.

The example of Haberler makes it clear that Becker and Baumol's discussion of Pigou in the first paragraph of their section VIII ([1], p. 367) merely begs the question.

[2] For details see [30], p. 23. Fisher and Cassel provide examples of the confusion here described; see above, p. 120, notes 2 and 3. Further discussion will be provided in a future publication.

[3] A similar factor is the undue concentration on the fact that the marginal rates of substitution are equal to the ratios of the prices, and not enough on the budget restraint—where the real balance effect is reflected. See [34], pp. 147–8.

[4] See above, p. 116, note 2.

[5] In the following summary it should be clear that references to the dichotomization issue are to this issue in the form summarised in the opening paragraphs of the article (i.e. in the form it existed at the time Becker and Baumol wrote), and not to its form at any earlier stage of the discussion.

It should be noted that references to Walras and Pareto have been deliberately omitted from the present discussion. A detailed treatment of these two economists is being deferred for a later occasion.

(1) Contemporary monetary theory has been involved in the dichotomization fallacy. This is amply demonstrated by the passages cited above—though this is not the purpose for which they were cited.

(2) (*a*) With the possible exception of Newcomb, it has not yet proved possible to obtain guidance on this question from the classical and neo-classical literature. In other words, there has not yet been produced a statement from this literature which defines and analyses the issue clearly and correctly.

(*b*) On the other hand, there has not yet been produced a statement from this literature which is clearly and unequivocally incorrect.

(3) More specifically, classical economists did not deal explicitly with the issue at all. They did, indeed, clearly discuss the real balance effect in their monetary theory. But this cannot be accepted as *prima facie* evidence that they would have consistently carried over recognition of this effect to a discussion of the form of the demand function in a monetary economy, had they actually extended their analysis in this direction.

(4) The picture with reference to neo-classical economists[1] is not so clear.

(*a*) At best, their position is like that of the classical economists.

(*b*) At worst, in several passages which are indirectly related to the issue, they made statements which create some suspicion of being involved in the dichotomization fallacy.

(5) To the extent that it is meaningful to speculate about such matters, one can have little doubt that, confronted with a demand function dependent upon real balances, classical and neo-classical economists (and, for that matter, contemporary economists, too !) would have readily accepted it, would have emphasised that it is implicit in their monetary analysis, and would have declared that it is a more precise reflection of their thinking on this matter all along.

The preceding outline also provides a convenient frame of reference within which Becker and Baumol's article can be viewed. With the first proposition Becker and Baumol do not disagree, though they do underestimate the extent of the fallacy.[2] Neither, needless to say, do they disagree with the last. It is, however, unfortunate that they fail to make clear that this proposition was never in question—and was, indeed, emphasised—in the discussion they are surveying.

The main proposition on which issue has been joined is the second. In an earlier article I attempted to adduce evidence to prove the *opposite* of proposition (2*b*) for Wicksell and Cassel.[3] As pointed out above, doubts were implicitly expressed about this evidence in a later article. Becker and Baumol's discussion explicitly shows that the evidence on

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[1] Again, Newcomb excepted—to the extent that he can be considered neo-classical.

[2] [1], p. 370, bottom, and p. 371, note 1.

[3] [30], p. 12, note 5.

Wicksell is irrelevant. It has also been shown above that the same is true for the evidence on Cassel. Thus, I have conceded the correctness of proposition (2*b*).

The only remaining disagreement exists with reference to proposition (2*a*). A primary purpose of Becker and Baumol's paper is to show that classical and neo-classical economists dealt explicitly and correctly with the dichotomization issue; i.e., to prove the *opposite* of proposition (2*a*). Unfortunately, the only evidence that they have brought in support of this contention is the well known fact that classical and neo-classical economists recognised the real balance effect in their monetary theory. As has been demonstrated in detail above, this evidence cannot be accepted as relevant to the dichotomization charge in the form in which it existed at the time Becker and Baumol wrote. It is relevant only to an earlier stage of the discussion, one which was later modified just for the purpose of taking explicitly into account the fact which Becker and Baumol now emphasise.

Propositions (3) and (4*a*) are in the background of proposition (2). Clearly, if there were agreement on these two propositions (and the last sentence of (3) is the crucial one), there would also be agreement on (2). Proposition (4*b*) is of secondary importance. Its truth or falsity, and the varying degrees of suspicion different students of the neo-classical literature might consider warranted, does not affect the main issues set out by the other propositions.

In other words, the main point of the present article has not been that the neo-classical literature might have been involved in the dichotomization fallacy, but that neither this literature nor the classical literature provides clear and explicit guidance on the dichotomization issue.

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The Lancashire Bill System and its Liverpool Protagonists, 1810-1827

By S. G. Checkland

"It was proper to inquire into the powers of this circulation and whether it could be shown by arguments and proved by facts to be capable of being converted into a solid and sufficient foundation for general currency."—B. A. Heywood, 1820.[1]

I

For the most part the merchants of Liverpool, in the monetary debate that began around 1809 and revived with new vigour after 1815, were to be numbered among the supporters of the Bank of England in its resistance to the return to gold at the old parity, and among the opponents of the bullionist school of Horner, Ricardo, Huskisson, and the rest. It is of some interest to study how this came about, for each commercial community is to some degree at least peculiar to itself; the expanding port of Liverpool arrived at its position in its own way.

Local monetary discussion was both lively and sustained; the merchants circulated a number of memoranda among themselves, and considerable pamphlet literature came into being. Liverpool reacted strongly to the Bullion Report, manifesting early impatience with discussions which did not seem to start from the damage done to trade by the Orders in Council and the Berlin Decrees,[2] but proceeding from about 1812 onward to inquire into the general principles appropriate to the national monetary system.

There were three principal ingredients in the Liverpool attitude; to none of them did the bullionists pay much attention. They were: the typical concern of the trader with his own House and its solvency, the instability of the markets for primary products in which Liverpool so largely dealt, and an addiction to a particular mode of mutual accommodation—the Bill System. The Ricardians, both in their general reasoning and in their monetary theory, took little interest in the firm, but for the Liverpool merchant this was the starting point of economic thinking. All Liverpool, from the new and hazardous undertakings to the long established houses, was fearful of the effects of disorderly liquidation. Further, the local merchants, with their heavy dealings in wheat, cotton, sugar and tobacco, were exposed to liquidity crises for commodity as well as monetary reasons; governed by erratic conditions of supply and a largely inelastic short-term demand, they were not sympathetic to mechanistic policies which depended in the main on the monetary rule of a fixed parity. Such a merchant community, through whose market operations the adjustments envisaged by the classical economists were supposed to take place, was much more reserved about the speed and painlessness of the corrective process than were the theorists who drew their analogies from the market for funds.[1]

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[1] *Observations on the Circulation of Individual Credit, on the Banking System of England, and on the Lancashire means of Circulation.* Part II. Liverpool, 1820, p. 59. The only copy traced of Part I, 1812, is in the L.S.E. Library.

[2] *Vide* S. Cock, Commercial Agent for Liverpool, *An Examination of the Report of the Bullion Committee.* London, 1810.

Fundamental to Liverpool monetary opinion was the system of mutual accommodation that had been refined to so high a pitch that both Liverpool and South Lancashire continued, even after the rise of the country bankers, to rely upon the bill of exchange for the great bulk of their transactions, with Bank of England notes for small payments.[2] By 1819 the bills seem to have become to some degree standardised in round sums ; by 1827, because the stamp duties militated against smaller bills, by far the greater amount were drawn for £100 to £500.[3]

Certain local merchants took to specialising in discounting. For a fee they put to the hazard their own assets, by guaranteeing certain links in the chain of transactions.[4] They also added to the supply of bills by putting into circulation their own inland bills, drawn chiefly upon their London agents, in favour of third parties. " Instead of saying that the Lancashire Banks trade in capital ", wrote Thomas Joplin, " it would perhaps be more proper to designate them Bill Brokers, on a large scale ".[5] They charged a commission of 5 or 10 per cent. and were, as Joplin remarked, " never subject to runs ". As a further extension, each of these local bankers had his agent in London who offered re-discount facilities. These agents, of course, in their turn had recourse to the Bank of England. Thus Liverpool and South

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[1] A good example was Henry Gardiner, the first Liverpool merchant to bring wheat from the Middle West. See his attacks on M'Culloch in his " Absenteeism Considered. . . ", *The Pamphleteer*, Vol. XXVI, No. LII. London, 1826, p. 2.

[2] For the working of the system in terms of a Lancashire manufacturer and trader, see T. S. Ashton, *An Eighteenth Century Industrialist*, *Peter Stubbs of Warrington, 1756–1806*. Manchester, 1936, Chapter VIII—" The Medium of Exchange ". For the Manchester attitude toward the system see: Ashton, *Economic and Social Investigations in Manchester, 1833–1933*. London, 1934, p. 85; Arthur Redford, *Manchester Merchants and Foreign Trade, 1794–1858*, Manchester, 1934, *passim*. For the most extensive account of its general working see Ashton, " The Bill of Exchange and Private Banks in Lancashire, 1790–1830 ", *Economic History Review*, Vol. XV, 1945, p. 25.

[3] *Vide* J. Ashton Yates, *Essays on Currency and Circulation*. London, 1827, p. 83.

[4] This meant that, without the aid of their own note issue, Lancashire bankers needed large personal resources : " . . . a Banker to do any Business in Lancashire must command a very large Capital, to furnish a proper Supply of Bank Notes for the Circulation of that Part of the Country where the Banker happens to be ; and for that Reason there are fewer Banks in Lancashire than in any other County of the same Extent and Population." (*Reports . . . of the House of Lords* . . .London, 1819. Evidence of Lewis Lloyd, p. 83.)

[5] *An Essay on the General Principles and Present Practice of Banking in England and Scotland* . . . second edition, London, 1822. Supplementary Observations, p. 19n.

Lancashire depended directly, in the event of stringency, upon the Bank, and were much affected by any proposal to govern its issue policy.

II

The necessary conditions for the working of such a system have been discussed in recent years in terms of the " commercial loan theory of money ", but as long ago as 1797 were implicit in the case argued by the Governors of the Bank itself based upon a sentence in Adam Smith. Liverpool merchants generalised from their own experience to argue that through such a system of discount there could be created an automatic adjustment of the circulation of money to the circulation of goods. The great difference between them and later advocates was that they had no great regard for the interest weapon as a control of discount policy.

Theoretically such mutual accommodation might operate without the intervention of bankers or public authorities at all, so long as, for every participant, the flow of maturity dates and sums due was evenly spread over time, and the real transactions they represented came to fruition in the same orderly way, with no sudden pressures to render merchants incapable of meeting their obligations immediately they fell due. Thus each trader would find that day by day the maturing of his own acceptances was matched by the discharge of those of others in his possession. If each trading unit so behaved, and no natural or human barrier stood in the way of completing contracts, it followed that the system as a whole was sound. The balance sheet of the collectivity thus derived from that of individuals, and hence must be solvent. This view is not unrelated to the approach inherent in Say's celebrated Law ; each new transaction, with its appropriate bill, provoked a further one; the buyer of goods must prepare for the maturity of his obligation, and, to this end, becomes a seller.[1]

From the point of view of the trading community as a whole, the system required that the general pattern of transactions be free of price shocks, so that each individual might be able to make those adjustments in his position that constituted the mutual guarantee of all. The essence of the system was that each bill should be drawn for a sum equal to a known physical quantum of goods, multiplied by a stable price or by a correctly anticipated one. With such a system, even though, as bills circulated, they lost any connection with a particular transaction, yet each enjoyed the security engendered by all the rest. The merchant had to abide by the rules that bills should be drawn only in such " real " terms, and with short maturities, in order to render as real as possible the assumption that prices were stable, or capable of anticipation; any departure from either postulate might bring first particular and then general pressure, unless the system contained shock absorbers in the form of private assets, banking assistance, or public action.

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[1] Henry Gardiner, *Essays on Currency and Absenteeism with Strictures on Mr. Drummond's pamphlet* . . . Liverpool, 1827, p. 21.

It might be thought that breaks in the pattern of transactions due to unstable prices or other eventualities might be precluded, in some measure, from creating liquidity crises, by variations in interest rates on bills. But the possibility that illiquid merchants might relieve themselves of short-term pressures by offering very high interest rates was not very real ; in any given situation there would be a maximum volume of paper capable of being kept afloat at the legal maximum of 5 per cent., which might well be inadequate. In fact, the Liverpool banks did not vary their rates in this way to any great extent, but charged a fixed fee per one hundred pounds discounted. There was a slight scope for interest variations when bills were created or passed between private persons, but such differences in the Liverpool context were so outweighed by considerations of capital loss or gain as to be of little significance. By the same token the system as practised in Liverpool would be only remotely responsive to changes in the discount rate sponsored by the monetary authority. Henry Gardiner in fact undertook to show that the reduction of the Bank's rate from 5 to 4 per cent. in 1825 was irrelevant to the level of economic activity.[1] Thus the system could not hope for much adjustment from interest variations ; it had to stand or fall depending on the degree of price stability, or failing that, of arrangements for moratoria and orderly liquidation.

But price stability or correct prediction were unlikely in the markets in which Liverpool dealt. The air of automatism of the system was but a deceptive projection of its assumptions that were either static or assumed too great a degree of foresight. By the same token it was impossible that the Liverpool merchant, embarrassed by price shifts, should eschew the accommodation bill. The case, then, for the bill system hinged upon its undoubted merits of flexibility and facility, put against the need to guarantee it against the inherent instability that accompanied the unreality of its assumptions, and the difficulties of conducting the credit purges thus made necessary.

III

On the soundness of the system Liverpool produced two schools of thought, in a way analogous to those that confronted one another before the Parliamentary Committees of 1810 and 1819, but distinctive in their origins and relationships. The larger and more typical group was that of the local merchants and bankers, taking as its starting point the needs of the business community for discount accommodation, and leading to a form of the bill system; it was opposed by those radicals who had developed, in the fierce campaigns against Tory financing, a strong distrust of monetary programmes not provided with automatic checks. In origin, both attitudes were empiric, directly derived from experience, but as the post-war debate proceeded the radical intellectuals were able to draw upon the superior systematisation of Ricardo and his school, and came to favour an even more literal return to older principles.

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[1] *On the Reduction of the Rate of Discount by the Bank of England.* London, n.d., p. 8.

Of course, all were agreed that whatever degree of self-adjustment was inherent in the system in times of tranquillity, it was highly vulnerable to public commotion or war. The West Indian merchants were among those hardest hit in 1793 because the safety of their estates from the enemy was immediately in doubt. So, too, was stability in danger when whole new fields of activity were suddenly thrown open as occurred in 1807 and 1812, or others suddenly closed as in 1815–16 ; as a Liverpool spokesman to a Parliamentary Committee put it : " They could not make their returns so quickly as their Bills fell due ".[1] But gold was no cure ; the Liverpool men recalled that the Bank had been operating on the principle of convertibility in 1793, and on other occasions when difficulty had occurred, and the fixed parity in itself had not served to preclude trouble. Liverpool argued that these were ills against which there was no monetary prophylactic ; all systems must break under such conditions ; war and the dramatic alteration of markets were eventualities largely irrelevant to the choice of a monetary principle.

There can be no doubt that up to the late 1820's Liverpool mercantile opinion favoured, in general, the case for an extension of something like their own bill system over the whole field of commerce. Roscoe, in the midst of the calamities of 1793, had told the critics of this form of instrument that without it British trade could not have attained one fifth of its actual size.[2] The Bank itself was no essential element, thought John Koster, for if its issue disappeared traders would soon become " satisfied with the notes of each other as a circulating medium ".[3] " My own preference ", wrote Thomas Martin, " is the Bill System which is so equal to the occasions of the Agricultural and Manufacturing members of the community, as well as of its Commercial members, and so equal likewise to the occasions of the Government ".[4] James Cropper, too, believed that the Bank of England would find the guides recommended by the Bullion Committee to be futile, and that it should concern itself with assisting the operation of the Bill System.[5] Even John Gladstone, who showed some hankering after gold, believed that the prior consideration affecting the level of business activity was not the money supply as controlled by the Bank, but " the degree of confidence which monied men possess ", and this would operate through mutual acceptances, largely independent of the Bank policy.[1] In the same vein Henry Gardiner remarked, " We can safely let trade regulate itself ".[2] But perhaps the most effective spokesman was B. A. Heywood, a leading local banker. He complained with vigour that the " circulation of individual credit " had been so largely ignored by the Committees of 1810 and 1819.[3]

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[1] *Report from the Select Committee on the State of Commercial Credit, 1811* (*Annual Register*, 1811, p. 288). Evidence of Mr. Cock, " commercial and public agent for the Corporation of Liverpool, and general agent to the merchants of the town ".

[2] *Thoughts on the Causes of the Present Failures.* London, 1793, p. 28.

[3] *Further Observations on Bullion and Bank Notes ; with remarks on some of the late . . . publications on these subjects.* Liverpool, 1811, p. 27.

[4] *Observations on Payments and Receipts* . . . Liverpool, 1819, p. 39n.

[5] Gardiner, *Essays*, p. 104. Cropper's pamphlet was " not published, but merely a few copies circulated amongst the Author's friends, for the benefit of their remarks ".

To most Liverpool opinion it seemed the most obvious good sense that the system should have primary regard to the liquidity position of the merchant community, accepting its estimate of what transactions should be properly undertaken. For men like Gladstone, Thomas Martin, Henry Gardiner and for Liverpool generally, the merchant was an initiator, a prime mover; in spite of the fact that he was a market operator, his conduct was no mere response to market stimuli. Nor was he the creature of the Bank and its issue policy ; the reverse was true. The merchant did not respond to increases in currency, by undertaking new transactions, rather did the merchant's decision to expand operations cause the increase in paper.[4] Nor were the Exchanges the mere reflection of issue policy; as Martin put it, " It is not . . . the paper money of the nation, but its trade and its war, by which . . . the exchanges rise or fall ".[5] The pace and direction of economic activity was primarily a matter of the initiative of traders, and in the interest of the country generally the monetary system should be operated in such terms as to aid them in forwarding their transactions.

But the real world was throwing up from time to time dramatic evidence that somehow or other the system of mutual accommodation could get badly out of hand. Liverpool suffered severe waves of illiquidity and bankruptcy capable of destroying not only new Houses, but of threatening those long established. What was wrong? At some point or other the implicit assumptions of the system were not fulfilled.

In Liverpool all those factors other than war, which contributed to breakdown, were discussed under the omnibus title of " speculation ". By 1827 we find Henry Gardiner explicitly attempting to make the distinction between the legitimate transaction and " The monster speculation ".[6] There had always been in the Liverpool mind some sense that dealings could in some undefined way be so distinguished; churchmen had condemned speculation, and established merchants spoke slightingly of " adventurers " and those who were not of " the regular trade ". There was, further, a strongly held opinion that the activities of speculators could cause great disruption under any monetary system, including a fixed gold parity. But how, in such an atmosphere of improvisations, to distinguish a legitimate risk from speculation? The latter, thought John Gladstone, was " inseparable from the best interests of trade for it grows out of prosperity ".[1] The only criterion to be derived from the general case for the bill system was the degree of certainty attaching, particularly, to the price assumptions of each transaction. But absolute knowledge would have confined trade to very narrow bounds indeed; it was the merchant's job to deal in unknowns.

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[1] *Reports from the Secret Committee of the House of Commons on the Expediency of the Bank resuming Cash Payments.* London, 1819. Evidence, p. 105.

[2] *Essays*, p. 68.

[3] *Op. cit.*, pp. 57, 59.

[4] Gardiner, *Essays*, pp. 25–27.

[5] *Op. cit.*, p. 45.

[6] *Essays*, p. 21 *et seq.*

At one extreme there were of course obvious speculators, who converged on whatever market appeared likely to suffer shortage or glut. By the rules of the bill system these were the responsibility of the bankers and other merchants; they should be confronted with a flat refusal of discount facilities. But in some markets, like cotton, brokers had appeared who themselves possessed considerable resources, and who could thus bypass the rules. This was serious in a commodity which, according to John Gladstone, constituted one half of all local trade.[2]

Brokers were by 1815 well established, eager to interest those who could obtain capital or credit, in a venture. They were usually of considerable wealth, and were on good terms with the bankers. In the twenties it was not unusual to undertake a speculation of £10,000 on a capital of £2,000 or even £1,000. Apparently the younger merchants were disposed to take the greatest chances; John Slack published his pamphlet as an express warning to them.[3] Thus there could come into being a whole flood of bills, sponsored by substantial brokers, the discharge of which was problematical. To the creation of such bills the rate of interest was wholly irrelevant; as Gardiner pointed out of such dealers, " they look for at least 100 per cent.".[4]

At the other pole there were clear cases where accommodation was clearly justified; the delay of a ship, the disruption of a particular transaction well covered by others. No Liverpool merchant could in fact have supported an absolute bar on temporary aid.[5]

But between these extremes were the most numerous cases, where the rule of real transactions, even if applied, would be misleading. Gardiner described the sequence of events in cotton, even when there was " not a bill discounted that was not founded on a *bona fide* transaction ".[1] A manufacturer, having bought cotton, has his bill discounted, which puts him in the position to sell abroad, exports are stimulated, the price of raw cotton rises, cotton holdings are written up, and a boom ensues, each new bill being created at *bona fide* prices. As prices rise "the regular trade" buy less because of distrust of the trend, and thus seek less discounts, but the speculators step in and take over an even larger share. Finally, of course, a break in prices ensues, and illiquidity is general. Thus the speculator, far from being an equaliser of price over time, may, through the use of discount facilities, aggravate price fluctuations. How, in general, in a context of changing prices, is the banker or merchant to identify a legitimate bill ?

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[1] Evidence, H. of C. 1819, p. 113.

[2] *Ibid*, p. 106.

[3] *Remarks on Cotton, and Retrospective Occurrences* . . . Liverpool, 1816. Preface. Slack condemned the practice of brokers buying and selling on their own account, p. 19.

[4] *On the Reduction of the Rate of Discount*, p. 8.

[5] Lord Lauderdale quoted against the Bank of England a case before the Court of Kings Bench in July, 1811. The Bank had discounted specially created bills to the extent of £100,000 for an insolvent Liverpool House, endorsed by Liverpool and London names. *Vide, The Depreciation of the Paper Currency of Great Britain Proved.* London, 1812, p. 62.

In practice a curious dichotomy appeared in the attitude of the Liverpool merchants. Though their general theoretical apologia for their system had one basis, namely the relationship between each bill and the sale in which it originated, their own commercial conduct had quite another. This was apparent in what happened when a merchant became insolvent. He would first be scrutinised as to his general situation (and not in terms of a particular bill-creating transaction). Thus there are accounts of an active trade in the bills of even insolvent debtors,[2] because it might be known, for example, that the cargoes they represented were still at sea, and a bill bought at the proper discount could still yield a profit: in short, such buyers were speculating on the net worth of the men in trouble.

The second criterion was to take a general view of the state of the chief branch of trade in which the dubious House was engaged. Thus the bills of a cotton merchant would be regarded in the general light of prevailing cotton prices; if these were thought too high, such a man's bills would become suspect. A test in such a case would be the accompanying price trends in cochineal, indigo, madder, quercitron bark and other dyeing materials; if their prices failed to rise with that of cotton, the market position was probably unsound, and cotton bills were regarded with suspicion. Further, it was generally known that certain branches of trade, like cotton, were more addicted than others to the accommodation bill, and hence were more vulnerable in a liquidity crisis. Similar estimates would be made of the position of corn merchants, exposed to the hazards of natural conditions and the arbitrary operation of the tariff scales.

In this way it might appear that the substance of the Liverpool case for the bill system tended to shift from each several bill and its transaction, to the House or firm concerned, and even to the stability of the Houses in a particular field taken as a whole. This involved a fundamental difference of emphasis between the " objective " criteria based on the real transactions and short maturities view, and one based on necessarily subjective estimates of net worth. This latter kind of guarantee was to rest on the intangible element of mercantile judgment.[1]

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[1] *Essays*, p. 14 *et seq.*

[2] John Hughes, *Liverpool Banks and Bankers, 1760–1837*. Liverpool, 1906, p. 42.

But for the Liverpool merchant to argue one set of criteria to justify the bill system as the guide to the Bank's discount policy, and to adopt another in his own dealings was not so inconsistent as might appear. Macleod regarded business men as suffering from the delusion that " Real Bills are essentially safe, because they arise out of real transactions, and represent property ".[2] Liverpool was not quite so simple-minded; its case was that if all bills conformed to the rules of real transactions, and short maturities, the safety of the system as a whole could be deduced from its entities. But once this condition was falsified, they knew full well that the whole structure of bills would be quickly revalued in terms of the net worth of drawers and endorsers.

IV

From the Liverpool point of view there were two aspects to the responsibility of the government and the private bankers. A more rigorous application of the rules of the system of mutual accommodation was called for, along with the willingness to supervise, when necessary, the inevitable general liquidations, consequent upon war, natural accident, or the imperfect application of the rules.

But the suggestions made by the Liverpool supporters for guaranteeing the proper relation between transactions and bills were not very substantial. It was Heywood's opinion that " the natural, and perhaps the only remedy is in the due regulation of the circulation of the bills of exchange, and in that vigilant check on their abuse, which is not connected with one species of currency more than with another ".[3] But he stopped short of specific recommendation. So, too, with Thomas Martin, who referred in the most general terms to " judicious legislative organisation of our banks ".[4] Others believed that the legislature was impotent in this matter, and that the solution lay in the refusal of the bankers to discount accommodation bills. " There is but one remedy ", said Gardiner; " the folly of some must be counterbalanced by additional prudence in others ", and " no banker ought, knowingly, to discount a bill founded on a speculative transaction ".[5] According to Lewis Lloyd of Manchester the bankers largely possessed the means for such discrimination: the accommodation bill typically bore a host of endorsements, but speculative bills travelled to London very quickly, " and come quite clean ".[1] But it appears unrealistic to hope that the banks should so police the discount system as to exclude such bills. Liverpool men had in fact no effective answer to the failure of the assumption of stable or correctly anticipated prices.

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[1] Roscoe expressed the typical view in saying : " The characters of mercantile men, in every part of the world, are duly and accurately estimated, and a good bill is as easily judged of as a good piece of money." (*Thoughts on the Causes of the Present Failures*, Liverpool, 1793, p. 11.) But these estimates could become highly volatile in times of stress. Billinge's *Liverpool Advertiser* felt called upon in the difficulties of 1810 to condemn the " licentious practice of whispering away reputation." (Hughes, *op. cit.*, pp. 19–20).

[2] H. D. Macleod, *The Theory of Credit*. Second edition, London, 1894. Vol. II, Part I, p. 566.

[3] *Op. cit.*, p. 51.

[4] *Op. cit.*, p. 53n.

[5] *Essays*, p. 106.

This they in effect conceded, in their belief that the government had a responsibility to supervise the liquidation process.[2] They had learned from experience that from time to time a temporary moratorium upon obligations was necessary. Whatever the abstract general merits of the bill system, stringency did occur, which if allowed to run its course, could do great damage, much beyond the liquidation of unsound firms. Its supervision was a national responsibility not to be sloughed off by enunciating the rule of convertibility.

V

But the advocacy of continuation of the bill system on these terms did not exhaust the ideas of the Liverpool anti-bullionists. Their willingness to dispense with gold, or to modify its traditional role, was of long standing,[3] and gave rise to alternative proposals. Its rejection suggested two plans for operating on the monetary system. One, put forward by George Booth, was in some sense an anticipation of the compensated dollar.[4] He would revert to silver, and the content of the shilling was to be varied following upon alterations in bullion prices. Thus a rise in the latter would be followed by a recoinage and each shilling would contain less silver proportional to the rise in price. The gold guineas would be unchanged, but the ratio of shillings (silver or paper) for guineas would follow the market price of gold in shillings. In this way time contracts would no longer give rise to inequities between borrower and lender, for creditors requiring to be paid in the metals would receive them at the paper price. Thomas Martin believed in a system of paper convertible to gold at the ruling market price, but he added to this a new proposal. The chief other change required was a means of varying government borrowing policy with the needs of private business. The Bank should be regulated by law in such wise that when trade is brisk (as measured by the Customs receipts) its advances to government should be limited " in a proportion to be fixed ", so as " to leave to the direct use of trade, the issues which, in bad times, are with better effect, divided between trade and government ".[1]

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[1] J. W. Gilbart, *A Practical Treatise on Banking*. 2nd ed. London, 1828, p. 35.

[2] Though they were prepared in 1793 to do the job themselves under government ægis. In that year the Common Council gained permission for an issue of local negotiable notes, to be supervised by a committee of Liverpool men (See Francis E. Hyde, Bradbury B. Parkinson and Sheila Marriner, " The Port of Liverpool and the Crisis of 1793," *Economica*, November, 1951, p. 363).

[3] But in spite of this attitude toward domestic problems, Liverpool merchants were much concerned that the currencies of the colonies with which they traded should be " sound ". George Irlam, in 1825, was agitated by the loose wording of an Order in Council which might have allowed a paper payment of the troops in Barbadoes (*Liverpool Parliamentary Office Papers*, Vol. I. Picton Library, Liverpool).

[4] *Observations on Paper Currency, the Bank of England Notes . . . and a Metallic Circulating Medium*. Liverpool, 1815. Booth's ideas are discussed in Jacob Viner, *Studies in the Theory of International Trade*, New York, London, 1937, p. 208.

Most Liverpool anti-bullionist opinion from John Koster[2] onward tended to reason that the Bank of England needed no other guide than to discount on *bona fide* bills. Martin, too, was in this tradition, but he was aware that the demands made by the government on the Bank were not irrelevant. Hence he arrived at the argument that the demands of business and of the State should operate in a reciprocal way, with the former having first claim. But he made no progress with the problem of the size of the aggregate credit and money supply. This was the aspect to which the Liverpool anti-bullionists could produce no answer, except to reiterate the argument that the " legitimate " demands of business should be met.

VI

Though the weight of Liverpool opinion lay with those who started their monetary reasoning from the bill system, there was a minority that reacted otherwise. It was composed of two elements. The negative-minded radicals like Egerton Smith, William Shepherd and Peter Crompton, had campaigned so long against the Pitt System and its creature the Bank, that they regarded it chiefly as a means of maintaining a coercive and corrupt government.[3] But there were a few, of whom John Ashton Yates was chief, who argued a reasoned case in monetary terms for the return to a gold system.

The record of the Bank of England was of course heavily involved in the Liverpool discussion. If the bill system had in fact served the nation well, it followed that the policy of the Bank in affording rediscount facilities, without regard to the course of paper-gold prices or the exchanges, was justified. Even more important, there was no case for imposing on the Bank any rule governing discounts, as was inherent in the bullionist case. On the other hand, if one commenced reasoning, not from the bill system, but from the Bank, and shared the view held by many that the Bank had been the mere tool of the government in making the funding system possible, then it followed that a sinister money power did exist. Further, that power must be curbed by submitting it to a rule of conduct of the kind involved in convertibility at a fixed parity.

The radicals were in a quandary. Should they embrace the bill system, with its implied favourable verdict on the Bank; or should they condemn so substantial an element in traditional local thought?

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[1] *Observations*, p. 9.

[2] S. G. Checkland, " John Koster, Anti-Bullionist," *The Manchester School*, May, 1952, p. 174.

[3] The radical attitude is to be derived from the *Liverpool Mercury*.

Those of Tory persuasion were not caught in this dilemma; throughout the war they had taken the view that the government's financing policy had been justified, so that no scapegoat was called for. But the vociferous radicals made it a principal preoccupation to attack the Bank as the centre of the funding system; yet they rejected the bullionist solution of keeping it in order by the principle of convertibility.

But Yates made a serious effort at analysis,[1] possibly the best that emerged from the local discussions. He had been brought up in the shadow of the great Roscoe, and had inherited much from the earlier radicals.[2] He condemned the Act of 1797 that had cut the link with the sheet-anchor of gold, he accepted Roscoe's strictures on the Directors " who led the way in the general discomfiture ", he profoundly distrusted the Bank as the controller of the monetary supply, and regarded the frequent recourse of the government to it for loans as a means of evading an attack on official corruption.

In a sense Yates was more bullionist than Ricardo; he advocated a return to a gold circulating medium, and opposed Ricardo's concession to fictitious money in the form of his " Economical and Secure Currency ". Paper was both the great aggravator of domestic speculation, inducing a spirit of gambling, and the great disruptor of the relationship between international price levels. Gold, on the other hand, insured against both. Yates appears to have been unique among Liverpool merchants in attaching much importance to relative price levels as affected by monetary policy; the more typical local view was that the relationship of British prices to the rest was something that could sort itself out, and to which the merchant could accommodate himself, but that the availability of discount facilities was of primary importance.

It was Yates' belief that speculation was best restrained by controlling the total money supply. More bills negotiated must necessarily, in his view, give rise to greater demand for cash, so that a speculative boom very soon came up against this barrier and was checked. Most of the rest of Liverpool agreed that in general gold would slow things down, but disagreed with Yates on the relationship between an expansion of bills and an expansion of cash, believing that to a very great extent they were independent of one another.

Thus Yates seems to emerge as a crusted monetary traditionalist, asking for a return to the confines of gold. Yet we find him, like his neighbours, arguing that the commercial community must not be abandoned in extremity, but that the government should suspend the rigours of contraction.[3] In short, even this lone local admirer of gold could do no other than demand of the government that it accept responsibility for orderly liquidation.

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[1] *Essays on Currency and Circulation.* London, 1827.

[2] This appears from his earlier *Letter on the Distresses of the Country*. Liverpool, 1817. The *Essays* were dedicated to Roscoe. For the latter see S. G. Checkland, " Economic Attitudes in Liverpool 1793–1807 ". *Economic History Review*, Second Series, Vol. V, No. 1, 1952, p. 58.

[3] *Memorial on Distress*, drafted by Yates, addressed by leading Liverpool Houses of business to Huskisson, February 14th, 1826. (*Liverpool Parliamentary Office Papers*, Huskisson Box). *Vide* also *Letter*, p. 69.

VII

By 1827 the course of events was moving against the Liverpool view. The return to gold by 1821 meant that the government had chosen another principle. Manchester, already threatening to supersede Liverpool as the leader of Lancashire, accepted resumption and remained loyal to gold.[1] The Liverpool expansionists resisted the return to cash payments in 1819 as inappropriate at that juncture,[2] and in 1821 tried to minimise its impact by petitioning for a lower parity.[3] Liverpool was apparently suspected of being in league with the Bank and the London money men in all this, for Gladstone was closely questioned in 1819, and Yates in 1826 felt it necessary to state explicitly that his petition of that year had no London origins.[4]

Soon the Lancashire bankers felt themselves threatened by the Bank of England, with its new powers acquired in 1826 to open branches in the country.[5] J. P. Heywood and John Moss, Liverpool's representatives on the General Committee of Country Bankers, subscribed to the sentiment of that body that this must " have the evident tendency to subvert the general banking system that has long existed throughout the country ", and accused the Bank of an " apparent object of supplanting the existing Banking Establishments ".[6] But a branch did appear in Liverpool in 1827. The new right to form Joint-stock Banks was also acted upon locally. From this time the decline of bills of exchange in Lancashire, already begun, proceeded at an increasing rate. The Bank of England offered to discount for the new Joint-stock bankers at 1 per cent. less than they charged to the public, and this was found to be a more profitable arrangement than undertaking an issue of local notes.[7] By the 1830's Lancashire was heavily involved in railway financing, requiring techniques very different from those associated with short-term instruments. So passed away the institutional framework in Lancashire out of which the case for the bill system had arisen.

It is clear that the Liverpool merchants and bankers, like most pragmatic persons, generalised too readily from their own experience. It was highly unrealistic, probably even as early as 1812, to ignore or minimise the functions of all the other forms of payment which had become current in the economy, with their impact upon the monetary situation, especially the growing technique of the multiple expansion of deposit money. Further, theirs was a trader's scheme, inappropriate to the needs of great capital projects. But though unrealistic, it was not unnatural to think that the system which had seen them through so great an expansion over a period of some fifty years should have great merit. The Liverpool monetary debate between 1810 and 1827 shows something of the way a community of business men steeped in their own needs and methods may react to the solutions produced by those for whom the problem is an exercise in *a priori* thinking.

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[1] Arthur Redford, *op. cit.*, p. 158 *et seq.*

[2] *Vide* Gladstone's Evidence, H. of C., 1819.

[3] The Petition is quoted in an Appendix to Yates' *Essays.*

[4] *Memorial on Distress.*

[5] See S. Evelyn Thomas, " The First English Provincial Banks," *Economic History*, Vol. III, January, 1934, p. 129.

[6] The proceedings are recorded in an anonymous publication, *An Address to the Proprietors of Bank Stock* . . . London, 1828. Appendix No. XIV.

[7] J. W. Gilbart, *The History and Principles of Banking.* London, 1866, p. 389.

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The Historist Reaction in English Political Economy 1870–90[1]

By A. W. Coats

During the 1870's English political economy suffered a considerable loss of public prestige. Confidence in the Ricardian " laws " was undermined by bitter controversies between leading economists such as that which resulted from John Stuart Mill's recantation of the wages-fund theory in 1869, and the belief that the received doctrine was disintegrating found supporting evidence in Jevons' scathing attack on the Ricardian theory of value.[2] On the occasion of the dinner given by the Political Economy Club of London to mark the centenary of the *Wealth of Nations* it was suggested that the economists " had better be celebrating the obsequies of their science than its jubilee ".[3] The nadir of this movement was reached in 1877, when it was formally proposed that Section F of the British Association, dealing with Economics and Statistics, should be dropped because its proceedings and its subject-matter were unscientific.[4]

This loss of prestige was in part the consequence of a naive misinterpretation of the nature and functions of political economy. No clear line can be drawn between the scientific and popular writings of this period, and many persons identified the teachings of the economists with policy recommendations. Accordingly, they held those teachings in high regard during the prosperous decades after the mid-century, attributing current prosperity to the success of the free trade doctrines. After 1873, however, when the tide turned, those same persons found in the state of trade ample evidence of the deficiencies of the laws of political economy. Thus the public attitude toward the science cannot be dissociated from the circumstances of the time.

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[1] The term " historism " is here used as in Professor Hayek's " Scientism and the Study of Society,—Part II ", *Economica*, Vol. X (1943), pp. 50–1, as the view that history was the source from which the theoretical science of society would spring. The term was introduced by Karl Menger in *Die Irrthümer des Historismus* (1884). In preparing this paper I have received many helpful suggestions from Professors Evans and Machlup and fellow members of the Political Economy Seminar at the Johns Hopkins University, and also from Mr. T. W. Hutchison of the London School of Economics.

[2] Jevons, *Theory of Political Economy* (London, 1871), Preface. *A propos* of the bad effects of controversies on political economy, John Ramsay McCulloch said that " the differences which have subsisted among the most eminent of its professors have proved exceedingly unfavourable to its progress, and have generated a disposition to distrust its best established conclusions ". Quoted by Henry Sidgwick, *Principles of Political Economy* (London, 1901), p. 5.

[3] Quoted by Jevons in " The Future of Political Economy ", *Fortnightly Review*, Vol. XXVI (1876), p. 190.

[4] See the *Journal of the Royal Statistical Society* (1877), pp. 468–475. The state of English political economy in the early 1870's is more fully discussed in T. W. Hutchison's book, *A Review of Economic Doctrines 1870–1929* (Oxford, 1953), pp. 1–31.

Some other reasons for the decline in public esteem were suggested by economic writers. To the disturbing effects of the disagreement between its leading spokesmen must be added the undue devotion to inherited tradition. Political economy had become rigid and inflexible under the shadow of J. S. Mill, for as Foxwell wrote, " after the appearance of Mill's *Principles*, English economists, for a whole generation, were men of one book ".[1] Yet developments which contemporary writers considered harmful to the science sometimes appeared constructive to later commentators. Thus Foxwell, in a retrospective review of the period, grouped the progressive forces at work under three headings, " theoretic criticism, historical method, and humanistic feelings ".[2] The wages-fund controversy and Jevons' attack on the Ricardian theory of value come under the first of these, while in the final category a wider stream of thought is encountered, embracing factory and social reform and the Christian Socialist Movement.

The present article centres attention on the second of these progressive forces—the historical method, and the debate occasioned by the attempt to make political economy an historical science. The historists led a series of critical attacks on the methods employed by the classical economists, especially Ricardo and his immediate followers, which brought forth a variety of replies from defenders of the main tradition. Both groups displayed a diversity of approaches which inhibits any brief characterisation of their views, but in general the historists pressed three lines of argument: they questioned the scientific status of political economy and the purpose of the subject; they protested against the narrowness of its scope; and they complained of the excessive reliance on the abstract-deductive method of reasoning, and the dogmatic application of conclusions to policy. In the following paragraphs the principal methodological issues will be reviewed and the contribution of the discussion to subsequent advances will be appraised.

THE BACKGROUND OF ENGLISH HISTORISM

To a greater extent than is usually recognised, the historist movement in English political economy was an indigenous growth. Foxwell considered that " perhaps the most effective of the influences which gave a new direction to economic study was that exercised by the rough but inexorable logic of events ",[3] and Marshall subsequently endorsed this view.[1] The influence of Richard Jones, who had stressed the limitations of the laws of political economy when applied to different historical situations, had been revived by the publication of his collected works in 1859, and Marshall attached considerable weight to his contribution.[2] Another native source of historical thought was Sir Henry Maine, who inspired Cliffe Leslie's criticisms of political economy.

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[1] Herbert Somerton Foxwell, Introduction to Anton Menger's *The Right to the Whole Produce of Labour* (London, 1899), p. lxxviii. It has been pertinently suggested that this was not the only time that English economists were " men of one book ".

[2] Foxwell, " The Economic Movement in England ", *Quarterly Journal of Economics*, Vol. II (1888), p. 87.

[3] *Ibid*, pp. 85–6.

From abroad the main influence was Auguste Comte who, through John Kells Ingram, and to a lesser extent through William Cunningham, initiated many of the proposals for reorganising economic science. J. S. Mill himself, despite a thorough Ricardian training and a destructive attack on positivist philosophy, made notable concessions to Comtist demands.[3] The rise of the German Historical School of Economics in the mid-century appears to have proceeded independently of the Comtist philosophy, although from a wider point of view the two movements had common origins. Unlike their American counterparts, who founded the American Economic Association in 1885, the English historists did not directly owe their inspiration to Germany, but rather used the German writings in support of their existing predilections.

In the following paragraphs the main arguments of the opponents of " orthodox " political economy will be outlined, together with the principal replies made by its defenders, under the headings " nature of the subject ", " scope ", and " method ".

NATURE OF THE SUBJECT

The crudest attack on contemporary political economy, one which probably inspired the proposal to abandon Section F, was that made by Bonamy Price, Professor of Political Economy at Oxford. The current " wild passion for scientific treatment ", Price argued, was a mistake, since political economy was not a science but a practical study. " What are called economic laws by most writers are mere tendencies. They profess no absolute and uniform character." Political economy " is the application of common sense to familiar processes. It explains their nature and manner of working." [4]

This denial of scientific status to political economy was welcomed by some popular writers but was rejected by most academicians, including Leslie and Ingram. Price's hostility to the term " tendency " is reminiscent of Whewell's introduction to Richard Jones' works,[1] and his rigid view of science was shared by Robert Lowe, one of the most outspoken supporters of Ricardianism. Defining science as " knowledge in its clearest and most absolute form ", of which the " one crucial test " was prediction, Lowe exhibited strong positivist leanings;[2] but in this, as in other matters, he was out of touch with the prevailing trend in economic literature. The leading writers accepted Mill's view that " all laws of causation, in consequence of their liability to be counteracted, require to be stated in words affirmative of tendencies only, and not of actual results ",[3] an interpretation which reflects the more precise and qualified tone of their writings.

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[1] Alfred Marshall, " The Old Generation of Economists and the New ", *Quarterly Journal of Economics*, Vol. XI (1897), p. 116.

[2] *Ibid*, p. 117, where Marshall wrote that Jones " said just what was wanted at the time; and his influence, though little heard of in the outer world, largely dominated the minds of those Englishmen who came to the serious study of economics after his works had been published by Dr. Whewell in 1859 ". Though referring to his own generation Marshall's judgment appears to grant too much to Jones' influence.

[3] Mill's comment that " we know not of any thinker who, before M. Comte, had penetrated to the philosophy of the matter, and placed the necessity of historical studies as the foundation of sociological speculation on the true footing ", was of the kind calculated to appeal to the advocates of historism. See J. S. Mill, *Auguste Comte and Positivism* (London, 1865), p. 86.

[4] Price, *Chapters on Practical Political Economy* (London, 1878), pp. 16, 15.

There was greater support for the notion that practical precepts constituted the end product of political economy, and it was to counter this view that J. E. Cairnes published his famous essay, " Political Economy and Laissez-Faire ".[4] Cairnes denied that economists were committed to a laissez faire programme and affirmed the validity of the concept as a theoretical first approximation, from which reasoning could proceed to more complex cases. In modern terminology, laissez-faire was a simple " model ", not a practical policy.

Walter Bagehot, editor of the *Economist*, also rejected the contention that economists should concentrate on policy recommendations, although he wished to strengthen the link between theory and practice. " Political economy ", he complained, " is an abstract science which labours under a special hardship. Those who are conversant with its abstractions are usually without a true contact with its facts; those who are in contact with its facts have usually little sympathy with and little cognisance of its abstractions; "[5] but he did not deny the discipline scientific status.

SCOPE

An attack on the narrowness of the current view of the proper scope of political economy was the main feature of Ingram's Presidential Address to Section F of the British Association in 1878, an Address which met with an enthusiastic response in America and in Germany. Ingram, who was profoundly influenced by Comte, emphasised the need for a unified science of society. While accepting the argument in favour of doing " one thing at a time ", he warned that the social sciences were still branches of one subject, " and the relations of the branches may be precisely the most important thing to be kept in view respecting them ".[1] The parallel between sociology and biology was relevant here, and the organic analogy loomed large in his exposition. Mill had conceded that in practical questions the different aspects of society were interconnected, and Ingram insisted that this was also true for theoretical purposes. In separating related matters, he said, economists had neglected moral issues, and for this they had been justly criticised by Carlyle, Ruskin and their followers.[2]

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[1] Whewell, *Literary Remains of the late Richard Jones* (London, 1859), pp. xiv–xv.

[2] Lowe, " Recent Attacks on Political Economy ", *The Nineteenth Century* (November, 1878), p. 860.

[3] J. S. Mill, *System of Logic* (New York, 1846), Bk. 3, ch. X, sec. 5, p. 258.

[4] Cairnes, " Political Economy and Laissez-Faire ", *Essays in Political Economy: Theoretical and Applied* (London, 1873), pp. 232–264.

[5] Bagehot, *Economic Studies* (London, 1888), p. 7.

Cliffe Leslie, though not a disciple of Comte, shared Ingram's views on the scope of economics. Economic, moral, and intellectual forces were identical, Leslie maintained, and " political economy is thus a department of the science of society which selects a special class of social phenomena for special investigation, but for this purpose must investigate all the forces and laws by which they are governed. The deductive economist misconceives altogether the method of isolation permissible in philosophy." [3]

However, the fallacy underlying this view had already been exposed by Henry Fawcett. " Political economy ", Fawcett said, " does not investigate all the laws which concern the production of wealth; for if it did investigate those laws, chemistry, physiology, mathematics, and various other branches of knowledge would form a part of the science of political economy. It will be necessary therefore to place some limit upon our investigation." [4] Henry Sidgwick likewise contended that while political economy was not an independent study, it was best pursued separately, if properly qualified.[5] Only by this method could economic problems be clearly distinguished from political or ethical issues, and it was essential to recognise the limits of the economist's province. With other writers, he held that it was useless to rely on Ingram's " laws of social evolution ", for the Comtist Sociology was still in embryo. It was generally agreed that different problems required different admixtures of economic and non-economic considerations and Sidgwick, like Cairnes, was anxious to avoid dogmatism on the matter.

Thus the representatives of the dominant tradition claimed scientific independence for the theoretical branch of the subject while admitting the relevance of non-economic factors in the application of economic principles to practical questions. But a change of emphasis in the interpretation of the scope of economics occurred during the period as a reliance on an economic " approach " to social phenomena tended to supplant references to a specifically " economic " range of subject-matter.[1] William Cunningham, a historist sympathiser, regarded this modification as highly significant, adding that " the historians isolate a group of facts and try to account for them; the normalists isolate certain motives and measure them, and formulate laws according to which these motives act. Professor Marshall describes economics as the science of measurable motives." [2] It is likely that this change indicated an increased unwillingness to differentiate rigidly between economic and non-economic facts, and was a response to the historist criticisms.

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[1] Ingram, *Proceedings of the British Association for the Advancement of Science* (1878), p. 646.

[2] The link between moralism, historism, and humanitarianism is exemplified by the work of Arnold Toynbee, a writer who had a significant impact on Oxford opinion in the 1870's. On methodological issues Toynbee was close to Bagehot's position. See Toynbee, *Lectures on the Industrial Revolution in England* (London, 1884); also Hutchison, *op. cit.*, pp. 11, 19.

[3] Leslie, *Essays in Moral and Political Philosophy* (London, 1879), p. 212.

[4] Fawcett, *Manual of Political Economy* (London, 1863), pp. 44–45.

[5] Sidgwick, *Principles of Political Economy* (London, 1883), p. 24.

METHOD

The dispute over method, *per se*, centered around two main issues. Firstly, should political economy be based on more specific or more general propositions? Secondly, to what extent is a general theory applicable to different concrete situations? Much of the controversy sprang from a failure to recognise that a theoretical proposition is valid only under given conditions, although this had been vigorously stated in earlier methodological writings. The historists appealed for more induction, more attention to the facts of economic and social life, both as a source of fruitful hypotheses and as a means of testing conclusions.

On the issue of the generality of the assumptions of political economy Ingram and Leslie were in close agreement. The Ricardian premises were termed " viciously abstract " in that they represented such broad categories that the essential realities were hidden. Assumptions such as " self-interest " and the " desire of wealth " had been treated as " simple, universal, and invariable principles ", whereas more specific assumptions should have been made, based on careful observations. The " desire of wealth ", Leslie said, occupied a central place in political economy comparable to that of natural selection in Darwinian theory, but " Mr. Darwin's hypothesis was based on many previous inductions, and followed by minute and elaborate verification, for which the sole substitute in political economy has been an ignoratio elenchi ".[3]

The argument was then directed against the practice of isolating certain motives as sufficient for the explanation of economic phenomena. Earlier economists had admitted the existence of non-economic motives, but Leslie suggested " with respect to the deductive economists' practice of setting aside a number of forces as 'friction', that the best corrective would be a demonstration that this so-called friction is capable of scientific analysis and measurement ".[1] Supporters of the traditional method must either argue that no other motives were relevant, or claim an intuitive knowledge of such motives.

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[1] Compare Cairnes, *The Character and Logical Method of Political Economy* (New York, 1875), Lecture, I, with John Neville Keynes, *The Scope and Method of Political Economy* (London, 1891), p. 132.

[2] Cunningham, " A Plea for Pure Theory ", *The Economic Review*, Vol. II (1892), p. 34. See also his article, " Why had Roscher so little Influence in England ? ", *Annals of the American Academy*, Vol. V (1894–95), pp. 317–34, which further indicates his divergence from Marshall's position.

[3] Leslie, *op. cit.*, p. 186.

In their reply to the charge that the premises of political economy were too broad to serve as the basis for theoretical reasoning the defenders of the classical system presented a united front. They maintained that these premises were founded on experience and were, for practical purposes, universally true. Nevertheless, Sidgwick emphasised the need for qualifications, adding that the writers of the " opposite school " had performed a valuable service in drawing attention to them. However, the basic methodological question, he claimed, was " not whether the play of the ordinary motives of self-interest ought to be limited or supplemented by the operation of other motives; but whether these other motives actually do, or can be reasonably expected to operate in such a way as to destroy the applicability of the method of economic analysis which assumes that each party to any free exchange will prefer his own interest to that of the other party ".[2] This he categorically denied.

The demand for an historical method arose partly as a protest against the dogmatic application of economic reasoning to practical affairs. The " deductive economists " were charged with a neglect of the changing structure of society, and the catchwords " perpetualism " and " cosmopolitanism "—derived from the German Historical School—were applied to the practice of attributing validity to basic principles at all times and in all places. As an alternative the historists proposed to compare societies at different stages of development and to formulate " laws of social evolution ". For Ingram, the historical method aimed at " describing objectively existing economic relations, not as immutable necessities, but as products of a gradual historical past, and susceptible of gradual modification in the future ", while the laws of the " economic constitution and movement of society " were to be obtained by observation.[3] Leslie, who used the terms " inductive " and " historical " as equivalents, also referred to " laws of social evolution " as the " ultimate causes " of economic phenomena. Deduction was not irrelevant, but he considered that " political economy has not reached the stage of a deductive science; that the fundamental laws of the economic world are still imperfectly known ; and that they can be fully known only by patient induction ".[4]

Walter Bagehot stood somewhat apart from the academic tradition, though his work was warmly approved by Marshall. Admitting that

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[1] *Ibid*, p. 194. This suggestion, he said, was made by Sir Henry Maine.

[2] Sidgwick, *Proceedings of the British Association* (1885), p. 1148. In the following paragraphs Sidgwick rather than Marshall has been cited as the principal spokesman for the orthodox position since his views are less familiar to modern readers.

[3] Ingram, *loc. cit.*, p. 654. To this Marshall replied: " Observation discovers nothing of the action of causes, but only of sequences in time ": *Memorials of Alfred Marshall* (ed. A. C. Pigou, 1925), p. 166.

[4] Leslie, *op. cit.*, p. 24.

English economists had shown an excessive desire for universality, Bagehot proceeded to examine the extent to which the basic postulates were relevant to different historical and geographical situations. In this respect he showed a leaning toward the historist position. J. S. Mill had claimed universality for the laws of production, but Bagehot held that all the doctrines of political economy applied to modern commercial nations alone. To limit the claims of the subject would sustain its authority, for " by marking the frontier of our property, we shall learn its use, and we shall have a positive and reliable basis for estimating its value ".[1]

The orthodox economists shared the historist desire to avoid excessive rigidity in the laws of political economy and in the application of doctrines to different historical situations. In general they agreed with Mill that Comte had not demonstrated the futility of social generalisations, but had merely shown " that these generalisations must necessarily be relative to a given form of civilisation and a given stage of social advancement. This, we apprehend, is what no political economist would deny." [2] Orthodox writers accepted this judgment as relevant to the applications of economic theory while insisting on the universality of the basic principles, when suitably qualified. In the 'seventies and 'eighties historical pronouncements became very fashionable, though it is difficult to judge how far the central body of economic analysis was affected by the change. Assumptions were more carefully stated, conclusions were more cautiously applied, and parallel comments can be cited from Ingram and Sidgwick to illustrate that the two groups were not far apart in this respect.[3] To Marshall, the change represented an enhanced appreciation of scientific method, amounting to " the abandonment of general propositions and dogmas in favour of processes of analysis and reasoning, carefully worked out and held ready for application to the special circumstances of particular problems relating to different countries and different ages, to different races and different classes of industry ".[4]

In answer to frequent charges that the Ricardians had placed undue reliance on deduction, Sidgwick replied that " the opposition between the Inductive and Deductive methods appears to have been urged by writers on both sides in needlessly sharp and uncompromising terms ".[5] Both methods were needed, but in different proportions in different parts of the subject. J. S. Mill, for instance, had relied on the inductive method in his theory of production, whereas in the theory of distribution, which had been a central part of economic analysis since Ricardo's day, the questions posed demanded a predominantly deductive treatment. The deductive method was indispensable because of the need to begin with simple cases and to interpret the motives of human agents. Successful deduction was largely dependent upon the ability of the reasoner to recognise the divergence between simplifying assumptions and the actual facts, and to judge the effects of modifying causes neglected in the premises. " It is obvious ", Sidgwick concluded, " that answers so obtained do not by themselves enable us accurately to interpret or to predict economic phenomena; but it is commonly held that when modified by a rough conjectural allowance for the difference between our hypothetical premises and the actual facts in any case, they do materially assist us in attaining approximate correctness in our interpretations and predictions ". Useful criticisms had been made by opposing writers, he added, " but I cannot accept the conclusion which some of them have proceeded to draw, that the traditional method of English political economy is essentially faulty and misleading ".[1]

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[1] Bagehot, *op. cit.*, p. 21.

[2] Mill, *Auguste Comte and Positivism*, p. 81.

[3] See Ingram, *Proceedings of the British Association* (1878), p. 653 ; Sidgwick, *Proceedings* (1885), p. 1150.

[4] Marshall, *Proceedings of the British Association* (1890), p. 899.

[5] Sidgwick, *op. cit.*, p. 7.

CONCLUSION

Treatises on the history of economic thought frequently proclaim the years 1870–71 as the beginning of a new era of theoretical advance, centering around the subjective theory of value. The years 1890–91 can be regarded as another turning point, closing off a phase of continuous methodological controversy and ushering in a period conspicuous for the development of a widely accepted body of theory. In various quarters there were indications of a new harmony and moderation—Adolf Wagner in Germany, Charles Dunbar and the American Economic Association in the United States, Alfred Marshall and John Neville Keynes in England, all produced important attempts to survey the condition of economic thought, and to establish the areas of agreement between different schools.[2]

While the methodological debates continued in Germany and Austria, this was not the case in the Anglo-Saxon countries. In England the new atmosphere must be credited largely to the Cambridge school, which had been gathering strength in the two preceding decades. This group had acquired its prestige through the outstanding abilities of its leaders, Marshall, Sidgwick, J. N. Keynes, and Foxwell, and, it must be acknowledged, through the absence of any serious rivals, a state of affairs partly to be accounted for by the recent premature decease of several eminent contemporaries.[3] Marshall's work, for instance,

[1] *Ibid*, p. 44.

[2] Wagner, Review of Marshall's " Principles ", *Quarterly Journal of Economics*, Vol. V (1891), pp. 319 338 ; Dunbar, " The Reaction in Political Economy ", *Quarterly Journal of Economics*, Vol. I (1887), pp. 1–27; (Dunbar's appointment as President of the American Economic Association in 1892 marked a widening of the organisation's membership, and signified the increased respect for divergent approaches to the subject.) Marshall, *Principles of Economics* (London, 1890) ; J. N. Keynes, *Scope and Method of Political Economy* (London, 1891).

[3] J. S. Mill died in 1873; Cairnes in 1875; Bagehot in 1877; Jevons in 1882; Leslie in 1882; and Fawcett in 1884.

showed a notable emphasis on the continuity of doctrine, and an attempt at the reconciliation of diverging views with the object of eliminating unnecessary controversy, for he denied an interest in compromise as such. Although the historists failed to gain the ascendancy, significant, if subtle modifications in the received doctrine had taken place.

In considering these modifications it must be recalled that some of the early historist enthusiasm subsequently found expression in the new field of economic history, while some of those who desired a unified social science turned their attentions to sociology. In political economy itself, apart from major developments in systematic theory, there was an increased understanding of scientific method. A specialised terminology was fashioned; a clarification of basic concepts occurred, from which a new set of definitions emerged; new theoretical tools were forged; assumptions were explicitly stated and more carefully qualified; and, above all, a more cautious set of policy recommendations was outlined, with a more modest statement of the contributions of pure theory. There was a better understanding of the relationship between theory and policy, and a wider recognition of the complementary nature of induction and deduction.

On the latter question there was a marked continuity in the orthodox methodology, although the leading classical writers had at times unduly relied on deductions from general premises. Popularisers had transformed this over-emphasis into a rigid system of laws which they dogmatically applied to a variety of current problems. The historist criticisms had a salutary effect in discrediting this practice for, as Marshall said, " general economic principles had to justify their existence before a court which no longer had any bias in their favour. . . . Consequently they became less dictatorial, and more willing to admit their own limitations. Never again will a Mrs. Trimmer, a Mrs. Marcet, or a Miss Martineau earn a goodly reputation by throwing them into the form of a catechism or of simple tales, by aid of which any intelligent governess might make clear to the children nestling around her where lies economic truth." [1]

The positive contributions of the historists, however, were more modest. Political economy could not and did not become an historical science. Most of the critics greatly undervalued deductive analysis, and their proposals were innocent of any systematic theory. They largely failed to distinguish the generality of economic principles from the relativity of economic applications, and since the Comtist vision of Sociology inspired a misguided belief that " laws of social evolution " were readily attainable or even in existence, their methodological programme was lacking in content.

Historist criticism was not, of course, the sole stimulus to the advance of economic science. This was, as Edgeworth remarked, an " age of luxuriant speculation, when novel theories teem in so many new Economic Journals ".[1] Even J. N. Keynes may be accused of having somewhat overrated the influence of the historists and the contribution of history to certain areas of economic theory.[2] Yet the influence of historism was undoubtedly significant. As Professor Nicholson said, in 1893, the traditional method had been modified and supplemented, rather than being revolutionised and supplanted; " the dogmatic slumber induced by popular approval has been rudely shattered, and although some of the more timid followers of the orthodox camp thought they had been killed when they were only frightened and awakened, the central positions are more secure than before ".[3] This, we may conclude, is explained by the fact that the defenders of classical political economy recognised many of its weaknesses, made appropriate adjustments in their teachings to allow for them, and thus preserved the tradition by cutting away the ground from under their critics' feet.

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[1] Marshall, " The Old Generation of Economists and the New ", *Quarterly Journal of Economics*, Vol. XI (1897), p. 117.

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[1] F. Y. Edgeworth, *Proceedings of the British Association* (1889), p. 676.

[2] See his references to the relativity of economic doctrines, *op. cit.*, p. 262, and to historical laws of economic development, *ibid.*, pp. 135, 267.

[3] J. S. Nicholson, *Proceedings of the British Association* (1893), reprinted in the *Journal of Political Economy*, Vol. II. (1893), p. 119.

Robbins on Robertson on Utility

By J. R. Hicks

1. The present note seeks to do no more than to reply to a question raised by Professor Robbins in his article[1] upon the " Utility " of Professor Robertson—a question on which he does me the honour of suggesting that my view would be of interest. I shall confine myself to this one particular matter—as I can fairly do, as I am in general agreement with the rest of Professor Robbins's paper. In any case, I am preparing a more extensive statement of my views on these subjects, so that I should prefer to say what I have to say on the wider issues at a later date.

The point in question concerns Professor Robbins's " reservation ". " Professor Robertson ", he tells us,

> " informs us that to be an ordinalist you must refuse to believe in the possibility of the judgment of differences. That is to say, while I may say that I prefer A to B and B to C., I may not say that my preference for A over B is greater than my preference for B over C, for that involves the possibility of cardinal measurement. I confess that I find this very difficult to swallow. If it is true, then, while retaining my right to differ with Sir Dennis on the real nature of the judgment of value, I will cheerfully consent to be called a cardinalist. For I am quite sure that I can and do judge differences. The proposition that my preference for the Rembrandt over the Holbein is less than my preference for the Holbein over, let us say, a Munnings, is perfectly intelligible to me ; but it does not seem to imply more than the capacity to recognise an order of importance of possible experiences. To relapse into abstraction, the fact that I can ' find a point B between A and C such that the move from A to B is rated *just* as highly as the move from B to C ' does *not* seem to me to be ' the same thing as saying that the interval A—C is *twice* the interval A—B ', as Sir Dennis says the ordinalist asserts. This seems to me to be a *non sequitur*. The one judgment asserts equivalence ; the other implies the possibility of addition. To say that a particular Rembrandt and a Titian seem equally important does not seem to me to imply that I am saying that the Rembrandt *plus* the Titian will give me twice as much pleasure. And surely, if it were true that the mere possibility of judgments of equivalence implied cardinal measurement, then the ordinalist would not have a leg to stand on anywhere ; for the whole of this side of the theory of value rests upon the possibility of the quantification of such judgments in terms of the relation of different quantities of goods. But I suspect that the whole matter is much more complicated than this."

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[1] *Economica*, May 1953, pp. 99–111.

And that is where he throws the ball to me. Something, as I think he himself admits, has gone wrong. What is it?

2. I am afraid that I have to begin by saying that the way out which *is* suggested in the above paragraph does not seem to me to be very promising. I do not see a *non sequitur* where Professor Robbins sees one. I would be quite prepared to talk cardinalism sufficiently far to admit that because the marginal utility of the Rembrandt is judged to be equal to that of the Titian, then the marginal utility of the Rembrandt plus the Titian will not be double that of the Rembrandt (or Titian) alone. But this is not the kind of addibility which is in question. If it is once granted that the marginal utility of the Rembrandt (with no Titian) is equal to the marginal utility of the Titian (after acquiring the Rembrandt), then I see no way of avoiding the conclusion that the marginal utility of the Rembrandt plus Titian is the sum of these two marginal utilities, and is in consequence the double of either alone. On this point, if I were dragged over the first hurdle, I should be on the side of Sir Dennis. The place where I get stuck is further back.

3. In order to indicate what does seem to me to be the main issue, I need to make a distinction, which can be expressed in terms of Professor Robbins's illustration in the following way. Putting it (as I think we ought to put it) in market terms, we should have to suppose that he has found himself at an auction, in which he has the opportunity of buying these pictures, and is considering what bids to offer. We should expect, in that situation, that his bids would be arrangeable on a cardinal scale; he would bid (say) £700 for the Rembrandt, £600 for the Holbein, and £300 for (perhaps it would be safer to say) the Paul Potter. In the sense of this scale, it is then evident that he prefers the second to the third more than he prefers the first to the second. No one, not even the most hard-bitten ordinalist would deny this. But what the ordinalist would do, if he were compelled (as on this occasion he is) to be pedantic, would be to insist that nothing more is being shown than *ordinal* properties of the scale of preferences. If the bids in question were true maxima, it would be shown that (a) his present wealth, (b) his present wealth plus the Rembrandt minus £700, (c) his present wealth plus the Holbein minus £600, (d) his present wealth plus the Potter minus £300, are *indifferent* positions. That is all that would be shown; cardinal utility does not have anything to do with it.

I am obliged to ask Professor Robbins whether he is quite sure that the judgments of differences which he thinks he can make are not, at bottom, of something like this character. Not, it may be, precisely of this character; he may be thinking of himself at the auction, not as buying on his own account, but as representing a public body, say the National Arts Collection Fund. Even so, the "ordinal" interpretation would hold good. The fact that cardinal valuations can be made, and are indeed so regularly made, in terms of money, is a matter of central importance; but we have *therefore* to be extremely careful to avoid mistaking these valuations for valuations in terms of " utility ".

4. The nature of the *additional* assumption which is being made by the cardinalist can perhaps be made clearer by taking the above argument a step further. Let us again contemplate Professor Robbins at his auction (buying on his own account); but let us now suppose that he is working under a *restriction.* Let us suppose that he has decided, before setting up his bids, that he has no more than £300 to spend on pictures out of his general funds; if he spends more than that, he is to raise the balance by selling some of his library. His bid for the Potter should be unaffected by this resolution; but those for the other pictures may well be reduced, perhaps to £400 for the Rembrandt and £375 for the Holbein. The three pictures still have values (to him) which are arrangeable upon a cardinal scale; but the relation between their places on the scale is quite different.

This is the point at which the cardinalist and ordinalist paths diverge. Neither party, I think, would deny that a change of this sort would occur; but there would be a distinct difference in interpretation. The ordinalist would observe that the first set of figures gives a set of marginal valuations of the pictures in terms of money with general purchasing power; while the second gives a set of valuations which is partly in terms of money with restricted purchasing power—or, what comes to the same thing, a valuation in terms of books. He would be in no way surprised that the two sets of valuations prove to be different; but, so far as this particular change in valuations was concerned, he would be prepared to leave the matter at that. But the cardinalist wants to go deeper; the question is whether he can, whether he usefully can. What he would say is that the two sets of valuations are the resultant of a set of valuations of the *pictures*, which is common to the two cases, combined with a set of valuations of marginal units of money, which differ. Now this looks quite sensible; but he cannot in fact make his dichotomy unless he has something *in which* to make this common set of valuations, and (here I come down on to the ordinalist side of the fence) I do not see what that something is. Does Professor Robbins? Does, even, when it comes to the point, Sir Dennis Robertson? May I ask them to make every effort they can to put on one side the cardinal measures in terms of some other commodity, such as money, the existence of which is not in doubt; and then tell me whether they can still find a cardinal valuation which is independent of these practical valuations, which must therefore be given to them in some way by the inner light? Personally, I cannot see it. But that is the point on which the issue of cardinalism versus ordinalism turns.

5. Now it may be that they will assure me that they have a perception of this secret measure, and that it is merely my obtuseness that

I cannot see it. Even so, I have one more shot in my locker. For, provided that one puts on one side all the "Welfare" side of the matter (on which I have no disagreement with Professor Robbins), I would claim that the *additional* characteristics which are introduced into the consumer's want-system by the assumption of cardinal utility are always, of necessity, irrelevant to his actual behaviour ; and that it is therefore impossible that they can give us any help in the explanation of his behaviour, or in our attempts to predict the consequences of changes in his economic environment. If we try to deal with any such problem in terms of cardinal utility, we shall be introducing an irrelevant element—a foreign body—which has to be expelled again before we arrive at our final result. Though it is not impossible that such a roundabout method may be an efficient method of arguing, there is a presumption that something more direct can be found. I would not claim that existing presentations of the ordinal theory are as direct as they might be (that phrase of Professor Robbins's about "indefinite proliferation of determinants" admittedly cuts home) ; but I do believe that, mainly as a result of Samuelson's work, we are now in sight of the direct statement for which we have been looking. But that is a matter on which I hope to enlarge in another place.

All Souls College, Oxford.

Book Reviews

British War Economy. By W. K. HANCOCK AND M. M. GOWING. H.M.S.O. 1949. xviii + 584 pp. 21s. net.

This review is four years overdue and time, whilst steadily enlarging the apology which I owe Sir Keith Hancock and Mrs. Gowing for its delay, has robbed me of opportunity for some of the felicities with which I should earlier have been pleased to begin these comments. Too many reviewers have already commented upon the style of this work and upon its cool mastery of the documents for my observations, though fully as genuine in their admiration, to add to that appreciation. It befits me not at all to congratulate the authors of this first volume in the civil history of the Second World War upon the speed with which they have brought their researches to publication.

There are certain things, however, which one would wish to do and for which there is still space. The first and somewhat personal duty is to thank Sir Keith Hancock and Mrs. Gowing for what they have said, in this volume, about the work of those economists who were civil servants in the war and particularly, since this volume of the history is written from a Cabinet Office standpoint, about the work of those who were members of the Economic Section of that Department. One must note with special satisfaction, in view of what has been declared elsewhere, the share of the credit here given (pp. 330-2) to the economists for the points rationing of food, " one of the Government's big home front successes of the war ".

The second—and much more general—task is to take up this volume, not primarily as a history, but as one of the major pieces in an enquiry whose primary purpose is, as the Preface here declares, " to find experience for Government use ". For while Professor Hancock has rightly disavowed any writing of a dissertation upon the problems of war economy in general, there are, throughout this book, the same major themes, " the themes which theorists of war economy will be looking for ", governing the structure of the book. Rightly, the economic developments are linked in Professor Hancock's and Mrs. Gowing's narrative with strategical events, with the growing efficiency of administration, the increasing solidarity of government and people and the progressive welding together of allies. But economics dominates the story, with attention given more to the establishment of the economic machine than to its end-product, the fighting of the war. Thus, though the five *parts* of this volume all have strategical heads, the *chapters* within them carry mostly economic labels. And the first two years of the war, the period up to Pearl Harbour, which was the least exciting strategically, is given more than half the space in the book, for it was then that the main economic problems of war-making were mastered.

Professor Hancock lists six subjects as being of main interest in the political economy of war: the United Kingdom's capacity to procure and transport overseas supplies; the mobilisation of its military and industrial manpower; the condition of its basic industries; the suction of resources out of the sector of civilian industry; the efforts to ensure " fair shares " of what remained;

and the efforts to curb the inflationary tendencies of the whole process. Despite the general excellence of the work, the treatment of these themes is uneven, the reason being fairly stated by Professor Hancock himself: " We have based our book primarily upon the records that are available at the centre of government ". This was inevitable if the volume was to be got out quickly. The central records were alone enough to tax the digestions of a pair of authors, and the work of the team of historians set to assimilate the departmental papers had only just begun. The result, however, is to give prime attention to those matters of policy which, in their urgency, drew Cabinet attention, or which departments disagreed about or, on the other hand, agreed to settle regularly in committee. Thus, while the stresses and anxieties of shipping are recorded in some detail, comment on the procurement of imported supplies is almost entirely confined to our purchasing missions in the United States and Canada and to the Combined Boards. The Prime Minister's directives on the allocation of shipping space and their antecedents are fully treated, incidentally providing one of the best illustrations of the practical significance of the marginal principle since Wicksteed.[1] But the drawing up of the departmental programmes, upon which Cabinet decisions were only the final seal, receives scarcely a mention. Even within these limitations, there are important omissions, the consequence of the decision (no doubt a right one) to reserve the subject of war production for a whole " synoptic volume " of its own. But it is a little surprising to find the allocation of raw materials omitted almost entirely from this volume. It is true, of course, that from 1942 raw material allocations were technically in the hands of the Minister of Production and that it was the Ministries of Supply and Aircraft Production which operated the " controls ". Nevertheless, the allocations affected civilian as well as war supplies and their settlement was very much a central affair. Professor Hancock and Mrs. Gowing describe the United States Controlled Raw Materials Plan as " the first effective instrument that the Americans discovered for allocating their economic resources amongst the competing claims of war "; although the United Kingdom was fortunately never dependent on material allocations to this extent, one might have expected, in a work of the present title, rather more about the British allocation system which provided the Americans with their model.

The central instrument for wartime planning in Britain was, of course, the control and allocation of manpower and this subject is magnificently treated in this volume, from the early hesitations to the final position where, the political inhibitions overcome and the lesson of " allocations vs. priorities " learnt, the manpower budgets had become " the main force in determining every part of the war effort from the numbers of R.A.F. heavy bombers raiding Germany to the size of the clothing ration ". It is significant, however, that the very next sentence to that just quoted speaks of the budgeting process as being in many ways " somewhat crude ", based on unreliable forward estimates and saved only by the surprising flexibility of the system. Moreover, the main point about budgets, as is said, is that they should be implemented. " During 1941," we are told, " the Ministry of Labour and National Service, which had not been born great and which had successfully avoided having greatness thrust upon it in the first six months of war, achieved its greatness," and, though leaving troublesome gaps between allocation and achievement in the basic Group II industries and the civil industries of Group III, found " like clockwork " the authorised intakes of the Services and " did more than was required of it " in building the munitions industries up to their peak. Picked out in this fashion, the phrases of Professor Hancock and Mrs. Gowing possibly seem a trifle fulsome; but in a large volume tightly packed with instances and statistics they were probably wise not to leave the facts entirely to speak for themselves.

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[1] The import programme is not the only example of the marginal principle in action, though the passage in pp. 266-7 is outstanding. The decision not to rob the Army of 7,000 men for the mines (p. 440) and the ultimate meaninglessness of " less essential " industries (p. 444) provide other cases.

Writing of manpower, the authors of *British War Economy* show keen awareness of the " thrust and drive " of the war effort. Such matters as the fair distribution of civilian goods, price controls, the pay of the Services, the establishment of codes of working conditions in industry and financial policy, though treated fully, are rightly scored in a minor key. The necessity of a " workable identification " of products for effective price control, the merits of points rationing, the place of priority dockets and special classes of user in a " fair " system and many similar items of distilled wisdom are duly recorded, in their historical setting, for the future planners of war economy, if such should ever be needed. Regarding financial policy, the early references to Gladstone and Patrick Colquhoun may exaggerate its importance just as certain later generalisations possibly overstate its success. The tests of financial policy embrace its post-war consequences as well as its wartime equity and ability to support the administrative pressure of mobilisation. But even when limiting comments to a wartime relevance, more should perhaps have been said on contracts and on the effects of E.P.T.

It is at points such as these, inevitably numerous in so comprehensive a volume, that one wonders what the result might have been if it had been written after, instead of before, the twenty-odd volumes of departmental histories. Some conclusions would no doubt have been modified, and there would have been some revision in the weights accorded to particular issues. Perhaps Sir Keith Hancock and his colleague can be persuaded one day to give us that " revision ": it would afford fascinating comparisons. But one may be pretty sure that the comparisons would be in details. The fine, clear structure of this volume and most of its content would remain, a remarkable piece of writing to crown what must surely be a monumental editorship.

R. C. TRESS.

The Control of Raw Materials. By J. HURSTFIELD. H.M.S.O. and Longmans. 1953. xiv + 530 pp. 35s.

Mr. Hurstfield has written a valuable and important book. No one who knows anything of the vast range of minutes, memoranda, files, statutory orders and statistical tables concerning each of the many raw materials subject to control will underrate the size of the task which confronted him. He has succeeded in making an orderly and intelligible account for which we must be grateful. It is written with detachment, as one would expect it to be, his conclusions and such critical comment as he allows himself being drawn quietly from the evidence.

The presentation of such a mass of material invites many questions and comments, from which one can select but a few. A book of equal size could have been written solely for economists. For example, Chapter XXIII is an interesting general account of raw materials costs and prices, to which students should be directed in order to enlarge and bring up to date Pigou's 1947 chapter on state regulated prices. Chapter X reviews the various forms of state purchasing, showing that over 80 per cent. of imported material was bought in this way. How far did the system of allocation of large quantities to big departments, described in Chapter V, really secure equi-marginal use of the various materials ? A more intensive study of these questions would have been of great current theoretical and practical interest, and it is to be hoped that in due course someone will undertake this work. Mr. Hurstfield has preferred to give a comprehensive account which begins with the pre-war commodity restriction schemes and the establishment of machinery for estimating military requirements, and passes on to the question of supplies, rationing and international coordination during the war itself. This method of treatment was the one best adapted to give a general view of the process and enables him to reach the conclusion that the Controls had become efficient and thorough by 1942–43, that producers and consumers were geared to the war effort by 1943, and that thereafter no fundamental change of machinery was made.

Reviewers of other volumes of the war history who, like the present reviewer, took some part in the events described, have felt that similar methods of treatment made the whole process appear rather more orderly than it really was. Thus, looking back on what happened, Mr. Hurstfield can set out the shipping programmes; but some of the steps taken by the Controls can be understood only if it is realised that these facts were not always known: eventual arrivals were not identical with programmes. Again, the Raw Materials Department was well run, and in the early stages, fairly self-contained. But as the scarcity increased, the consuming departments enlarged their responsibilities to cover the entire life of the nation, and coordinating ministries and international bodies multiplied, so that it became entangled in a great, rather sprawling administrative machine which had weaknesses and untidinesses. All the great ministries suffered from such things as the spawning of new branches; overlapping branches apparently impossible to merge; branches run by competent people but producing memoranda, circulars and directions which seemed to have no particular effect on anyone or on the course of events; coordinating branches which did not coordinate because the methods and solutions adopted by the branches to be coordinated derived from the nature of their problems and there was therefore not much to be done about it. The creation of the Ministry of Production strengthened the Materials Committee, but the establishment of its own commodity sections added to cumbersomeness and almost certainly reduced efficiency. A study of some of these problems, bearing in mind some of the pages of the Haldane Report on the *Machinery of Government* and of the 1918 Bradbury Committee's report on the *Organisation and Staffing of Government Offices* might again teach us some lessons in the arts of administration which seem so easy to forget. Chapters XVIII and XXV, which describe the achievements of C.R.M.B., also indicate, if lightly, how differences of national interest and of administrative habits, as well as internal pressures, can make international cooperation hard work; it would be salutary reading for anyone who thinks that " world planning " is just an easy substitute for the market mechanism. Mr. Hurstfield, who obviously had his ears and eyes open, comments justly on many of these matters. But the fact that in the end it all " worked " should not lead the unwary to overlook the wastes which can occur in this kind of total planning.

Secondly, narrating the story of the Controls as a whole, rather than commodity by commodity, gives a picture of a chain of events from service demands and the supply by the Controls to the allocation by the Materials Committee, which is broadly true, but is not the complete truth. For often it was the skill and initiative of the Controls in seeking out new sources of supply, overcoming production and transport problems, finding substitutes or cutting off a line of consumption, which determined what could be supplied and when. It was on the frontier of the Controls that much of the vital and exciting work was done. The traffic was a two-way traffic, to the centre as well as from it. And only a connected account of each of the Controls separately would fully explain the reasons for their varied production, rationing and price policies.

Perhaps the most striking thing that emerges from the work is the contrast between the final success of these instruments of control, " slowly and pragmatically modelled and adapted ", and what must be regarded as a deplorable start. Deplorable, not in organisation, on which many able civil servants had been working for long hours for several years before the war broke out: that was ready, and so were the preliminary statutory orders. What was lamentable was that stocks of many major commodities were apparently lower in 1939 than in 1938—despite the warning of the Munich crisis. And Appendix 4 shows that in only 6 of 21 commodities examined were the stocks equal to six months' consumption.

Chapters II and III, which set out this remarkable story, are perhaps Mr. Hurstfield's chief contribution to public knowledge. To what was this astonishing lack of preparation due? Was it too much statistics and too little common sense? The C.I.D. had set up in 1924 the Principal Supply Officers Committee which, later enlarged, had amongst its tasks that of estimating raw material requirements, in particular those of the services. The procedure envisaged was to start with the probable nature of the military operations, and then to break down the equipment they required into their raw material content. On this basis the Committee soon got bogged down into all kinds of technical difficulties; in 1928 it asked on what sort of terrain the hypothetical war was to be fought, and which of the three services was supposed to be dominant. In 1935 the Committee was told to estimate on the hypothesis of a war with Germany within five years. This was but seventeen years after the conclusion of the First World War, the lessons and memories of which, one would have thought, would have remained in someone's mind. On that hypothesis, was not the simple answer—calling for no detailed calculation—for production, " the maximum " and for stocks, " a lot ? " Yet apart from certain metals, little in fact was done to accumulate reserve stocks, the objective of six months' consumption in many cases not being reached. Having failed or decided not to accumulate its own reserves, the Government tried to persuade individual traders to increase their private stocks, but except in a few cases did not have ready any scheme to meet in some degree the traders' requests for help towards the cost of storage or for some protection against risks of fall of prices. And in 1937 at the Imperial Conference it closed the door on Commonwealth " options " by saying that it could not undertake in peace time any commitment to purchase materials during a period of war. Sir Arthur Salter's eleventh-hour proposal in June 1939 to buy £100 millions worth of food and materials of the type likely to make heavy demands on shipping was rejected for reasons such as port congestion, interruption of the ordinary programme of essential imports, and storage problems which, though not without point, were precisely the difficulties with which we were struggling within a few months.

Some of these decisions were the consequence of a persistent belief that adequate shipping would be available, but since after 1935 the hypothesis was a war with Germany, it was surely likely that sooner or later the enemy would apply and intensify the methods which were so great a challenge to us in 1917. No doubt this lack of realism derived in part from the political illusions of the time. Mr. Hurstfield's account of all this, related with commendable detachment, contains some salutary lessons for planners, whether for peace or war. But if the lessons are to be learned, a judgment must be made. To the present reviewer this course of events was inexcusable, and the Ministers who shaped the high policy within the framework of which the estimates and decisions had to be made bear a heavy burden of responsibility. The lessons of the past were known or discoverable, the situation could certainly have been sufficiently foreseen in 1936 to enable broad decisions to be made, and there were already warnings to which ready ears would have listened. State policy must, of course, take into account political as well as economic considerations, but it is not wise to dim one's economic eyesight by wearing tinted spectacles.

P. FORD.

Econometrics. By JAN TINBERGEN. George Allen & Unwin. 1951. xii + 258 pp. 36s.

The high hopes of those who in 1930 marched off into the jungle announcing their intention to find the Eldorado of an empirically verified and quantitatively exact predictive economics have since then, to judge by the messages which have filtered back to civilisation, been a little reduced and voices have even been heard amongst the party suggesting a more modest objective. The word *econometrics* was invented as a name for the task of translating the statements of theoretical economics into algebraic form and then determining by statistical studies actual numerical values for the parameters of the equations thus set up. The result, it was claimed, would enable the experts to foresee the economic course of events if the system were left to itself and to tell statesmen in advance the precise effects of given policies and measures. Some would say that to believe this possible, in the ambitious sense which the pioneers have had in mind, was to misconceive the nature of human affairs, and that in hoping to emulate the astronomers and the engineers, the econometricians started out from mistaken premises. It seems at any rate to be true that even the most complex models which the econometricians have yet constructed have had questionable predictive value and that in one or two dramatic instances econometric prophecies have seriously misled the policy makers who trusted them. Thus the question is very pressing and important for all who have to decide what form research effort in British universities should take, whether they ought to set their hearts on establishing, staffing, and running econometric research centres at much cost and choosing as research students only those with a sufficient mathematical bent and background to take part in such work, or whether they will not get better value for their money, in terms of interesting, educative, and mind-broadening experience for a larger number of unquestionably gifted, though not necessarily figure-hungry, students, by adhering to the tradition of economics as a branch of philosophy illuminated by history, to be pursued by individuals in the study rather than by teams in the laboratory. To put this question into words is not in the least to be guilty of such folly as to doubt the vital importance of assembling numerical descriptions of the past course of economic history and of the current situation. National income accounting; the Leontief scheme for describing numerically the structure of production or the interlocking organisation of industry from field and mine to the retailer; the demand studies of Henry Schultz, of Professor Herman Wold and of Mr. Richard Stone; the indexes of production maintained at Cambridge and in the Central Statistical Office; these are a few examples of the use of statistical methods to make precise, detailed and clear-cut for the economist the picture whose meaning he has to explain. Such work can be done only in properly equipped centres where many mathematicians, statisticians, and economists can collaborate and can have the services of computers and perhaps access to mathematical laboratories. But to aim at having such a centre in every University in Britain, and to regard its work as the only worth while form which postgraduate work or advanced study can take, would mean a most wasteful reduplication of effort and would repel from economics a great many able and even brilliant men and women who have an invaluable potential contribution to make in the academic or the administrative or the business field, and drive them to read history or political science as a training for their life's work instead of economics. I think, therefore, that we need not greatly deplore the conservative tendency which many British universities still show in this matter.

It may seem somewhat ungracious to make the reviewing of a book, merely because its title is *Econometrics*, the excuse for airing these heart-searchings and for thinking aloud on a problem of policy. Yet the book itself leads me to suspect that Professor Tinbergen would go some way to agree with the foregoing reflections. This is not a manual of detailed procedure for the expert practitioner of econometrics, but on the contrary, a book that every student of economics could profitably read. It begins with a clear and systematic explanation of how economic theories can be put into algebraic language and of the advantages, in clarity, precision, and gained insight, of doing this. Here for example we can see how it is that, under imperfect competition, demand-conditions turn up in the supply equation. Next an easy and readable account is given of what is broadly involved in the accepted methods of handling time-series, in multiple correlation analysis and in bunch-map procedure; the logic of Haavelmo's method is briefly touched on and the nature of the difficulties denoted by multi-collinearity and the identification problem is indicated. All this statistical theory and method is only sketched, but, of course, with the sure touch and the eye for logical essentials of a master of the art. All the foregoing has occupied 88 pages. The next 70 are devoted to a wide survey of the economic problems and theories to which the econometric procedures have been applied, with a selection of illustrative results. The main text concludes with an illustration of the use of econometric methods in choosing amongst alternative policies for dealing with unemployment and the balance of payments. This part, describing the use of a Frisch " decision model ", is rather more technical and difficult than the extremely easy earlier portions of the book. There is in addition to the main text an Appendix in which articles from *Ekonomisk Tidskrift*, *Economica*, and *Metroeconomica* are reprinted.

It will never be possible for more than a minority of those who study or use economics to become practising advanced econometricians. For the others, the majority, who will have in future as in the past to be content with qualitative economics, this book gives a very clear and simple account of the kind of thing that econometricians do. This is a good time for such a popularly accessible survey and guide to be published, for if a fully metric economics has begun to seem a shimmering mirage, it is all the more necessary for economists of both persuasions to take stock and consider where they shall go from here.

G. L. S. Shackle.

Economic Stability in a Changing World. By John H. Williams. Oxford University Press, New York. 1953. vii + 284 pp. $5.30.

This collection of published papers includes some which have already reappeared once, in the volume *Monetary Plans and Other Essays*, but as this appeared in 1944 the repetition has a special justification. The repeated papers also mix well with those written since 1944; there is about the new collection a unity unusual in such books.

Professor Williams divides the papers into three parts: " Economic Theory and Policy ", " the Marshall Plan ", and " Earlier Papers ". Part II is complete in itself, with six papers (and an appendix at the end of the volume) on the European recovery plan, the first written in the autumn of 1947 and the last after the plan had run its course. These six papers can be strongly recommended as a running commentary from an American who always had sympathy and understanding though he always wrote from a strictly American standpoint. Looking back, there is remarkably little with which one can disagree. Perhaps there could have been more appreciation of the important part the European Payments Union has in the event played, while it is surprising that as practical an economist as Professor Williams should have looked for other measures of economic union much more difficult to achieve. Like most European experts, he stressed the desirability of more trade with Eastern Europe. In retrospect, it appears likely that the shrinkage of this trade was a symptom of more fundamental economic forces, and not a temporary disturbance that could be overcome by a political rapprochement. In general, however, these papers have stood well the test of time; it was not everyone who could write early in 1949, " For some time it has been my view that . . . the problem might increasingly present itself as an approach to a plateau, which might be fairly quickly reached, but which once reached might prove difficult to get beyond ".

Included in the other two parts are two fine reviews of Keynes: a 1931 review of the *Treatise*, and a general review in 1948. These and the more general essays that form the remainder of the book tell us much of Professor Williams's approach to a wide range of economic problems. A long paper on " Free Enterprise and Full Employment ", first published in 1945, is a preview of the domestic postwar economic problems of the United States. Among other points it is notable for its refusal to presume a postwar slump. " My guess is," wrote Professor Williams, " that these fears will turn out to be exaggerated. One point . . . is that the very fact of accumulated wartime saving may make people more willing after the war to spend their current incomes. . . . "

Altogether, the author may claim that these papers, written over many years, wear well. It is impossible to read the collection without feeling that perhaps, after all, economists do have some competence in prediction.

R. S. Sayers.

Home and Foreign Investment 1870–1913. By A. K. CAIRNCROSS. Cambridge University Press. 1953. xvi + 251 pp. 30s.

Many people reading this volume will experience the same sensation as the old lady who, on seeing *Hamlet* for the first time, remarked that it was full of quotations. Rarely, if ever, can any unpublished Ph.D. thesis have been so well known to so many economists. The long delayed decision to publish must be given the greatest possible welcome.

In actual fact, the thesis is amended in two separate ways in the present volume. First of all, some of the original theoretical discussion is omitted. On the other hand, essays on topics related to the central theme (e.g. Investment in Canada 1900-13, Internal Migration in Victorian England) originally published in various journals are included. Secondly, amendments are also made in that many of the statistical calculations have been revised in the light of both the author's own reflections and the recent writings of others in this field.

The result of these surgical operations is a series of essays rather than a book. But nevertheless, there is an essential unity about these essays, built as they are on the twin themes of capital accumulation and labour movements. Nor is it only a common theme which links together the various chapters. Throughout the author shows himself to be a master of applied economics; relatively few authors have the same facility for intermingling economic and statistical arguments so neatly.

Little need be said here about the major estimates. The heart of the book is the construction of a domestic investment series for the United Kingdom from 1870-1913, and only those who have tried to work in this field in this period can fully appreciate the immense difficulties which beset the author. Even worse than the task of disentangling the Census of 1907 was that of constructing appropriate indicators for the period, and the fullest tribute must be paid to the author's erudition and wide knowledge of the relevant sources.

But having paid homage to Cairncross the patient researcher and fertile innovator, we must now pass judgment on Cairncross the editor. This is a different story. The author himself remarks that in the course of editing the parent conceived some respect for his intellectual offspring; the offspring, however, might wish to disown the father on some occasions.

The discussion of the concepts of investment and the precise nature of the estimates for 1907 (pp. 119-124) leaves something to be desired. The key seems to be the frequent use of the term ' gross fixed investment ' in the unusual sense of including *all* repairs. The precise relationship between the indicator series and the pivot total for 1907 is obscured rather than illuminated by the discussion on pp. 124-5, (it would, incidentally, help if the ' £m.' sign had not been omitted from the figures on p. 124). The argument (p. 166) that the time-series of ' new construction ' can be treated as approximating to ' net home investment ' as the difference between the two is only £10 m. in 1907 is not so plausible once it is realised that a series giving less than a two-thirds coverage of new construction is being used as an indicator of changes in stocks and consumer durables. It is undoubtedly true that Professor Cairncross found the 1907 Census a labyrinth; but passages such as these tempt one to say that he has left it a maze.

Nor did the original work gain much by the addition of Chapter I, the only completely new chapter in the book. We are treated here to a series of *ex-cathedra* judgments which sometimes turn out to be without very much justification. The argument on page 3 about American investment abroad is at first sight arresting; but reference to page 4 shows that the figure of $600 billion ought to be halved. The argument on page 7 about the constancy of shares in the National Income clearly does not hold. The constancy of return on capital over time cannot be used both as evidence that the capital-income ratio did not vary and that the yield on capital did not vary (the two conditions required for his argument) when the estimate of capital is itself derived by capitalising income.

A. R. PREST.

The Price of Fuel. By I. M. D. LITTLE. Oxford University Press and Geoffrey Cumberlege. 1953. xiv + 197 pp. 12s. 6d.

This book makes a strong plea for the application of familiar economic principles in determining fuel prices—all the stronger for being made by the author of *A Critique of Welfare Economics*. The surprising thing, perhaps, is that such a plea should have to be made at all, for one may ask (with the author) how the best " fuel policy " (translated: " how much of what fuels should be supplied and used for what purposes ") could be selected by anything other than the familiar economic principles. Much popular discussion, however, thinks otherwise: " national fuel policy " is often a term of art, meaning that fuel consumers should be compelled or induced to use one fuel rather than others for a particular service because it may take less coal—coal being treated as the only scarce resource expended in fuel services.

Mr. Little dismisses this " coal theory of value ": the pattern of fuel use should be determined mainly by free choice between competing fuels—subject to their being sold at economic prices. He considers, however, that there are two important departures from economic pricing in current practice.

The first is in coal. The current policy of fixing prices to cover only average costs means that coal is being sold in this country at prices much below what would equate demand and supply; these prices, he argues, give the wrong signal to consumers about the amount of expenditure on fuel saving that is worth while, and to producers, about what costs are worth incurring to raise output. Mr. Little expects this gap between demand and supply at present prices to continue for years ahead, and concludes that there is a strong case for a substantial increase in the average price of coal in this country: he thus endorses the recommendation of one half of the Ridley Committee, though he shuns the marginal-cost argument on which they base it. The case has been presented often before and, treated as a strictly economic problem, is not easily rejected—even if Mr. Little's premise of a growing shortage of coal in Europe is not accepted.

Mr. Little's second main divergence from economic pricing is in electricity tariffs. Here also he is on well trodden ground. Because electricity supply is capital-intensive, and because the plant must be large enough to meet demand at any point of time, the long-run marginal cost per unit supplied during the limited number of hours of peak load each year is very high; at off-peak hours it is very low, being virtually free of capital costs. By a novel application of probability theory, Mr. Little decides that the marginal cost of peak-hour supplies should be regarded as $17\frac{1}{2}$ times that of off-peak hours. But existing electricity tariffs make no corresponding difference between charges at different hours of the day, and thus, Mr. Little argues, grossly distort the pattern of fuel use.

The case may not be nearly so strong as this, because the amount of new plant to be installed is related, even in the long run, not to the load which occurs during only a few hours in the whole year, but to the load during many hours on many days of the year: extreme peak demands are met by bringing into service older plant which but for this occasional need would be scrapped. This old plant has, of course, a much higher operating cost per unit of output than new plant, but a lower total cost than new plant would carry if installed for use during a limited number of hours only, because of the heavy incidence of its capital charges. The effect of this availability of old plant, free of capital charges, is that cost of supply during peak hours is much lower than Mr. Little calculates. Nevertheless, it is still probably a multiple of cost at other times, and particularly at hours outside the working day; at night many even of the most efficient generating sets may be running so underloaded that marginal supply costs are very low indeed. Thus the case for time-differential charging in electricity, especially between night and day, may well be sound; only experience will give the answer. But as between peak and off-peak hours simply, especially when full account is taken of all the costs and relevant effects of applying such tariffs, it is not so spectacularly attractive as Mr. Little thinks.

Although many of the detailed arguments and some of the statements of facts can be challenged—which weakens the force of the author's conclusions—this book is a welcome addition to the literature of applied economics. It should be read by all who share the responsibility of devising and applying pricing policies for the nationalised fuel supplies, and will be appreciated by many others.

P. CHANTLER.

International Trade Statistics. Edited by R. G. D. ALLEN and J. EDWARD ELY. John Wiley & Sons, New York. Chapman & Hall, Ltd. 1953. xii + 448 pp. 54s.

Statisticians are necessarily compromisers. Called upon to serve many different users of information, they must make certain that they satisfy no one at the expense of another of equal importance. Should trade statistics be kept by countries on the basis of shipments, for the convenience of traders; on the basis of payments, for the compilers and interpreters of balance-of-payments estimates; or on the basis of production and consumption? Should refined metals be classified with their manufactures or with other raw materials? Is comparability through time preferable to obsolescence; or adoption of a standard for international comparison likely to reduce the usefulness of the statistics domestically? None of these questions receives a categoric answer. All must be met with compromise or with a choice of one over another.

The editors of this volume have had to face the same sort of compromise. The nineteen essays on international trade statistics in this volume are addressed to economists, statisticians, students and business men. My only possible criticism of it is that it fulfils the needs of international trade economists so fully (I turned to it for information on three separate points in the first week and learned what I sought), that it must surely slight the requirements of others.

The volume is divided into three parts. The first discusses such basic questions as commodity and country classification and coverage, valuation and exchange conversions—on a general level. The third describes national statistical practice—in separate chapters for the United States and the United Kingdom, and in more compact form in five chapters for the rest of the world. The middle part, dealing with the use of trade statistics, necessarily has less claim to complete coverage. Four essays deal with: the merchandise account in the balance of payments, index numbers of volume and price, international comparisons, and the relations of trade to the national economy. This method gives rise to a certain amount of duplication (*vide* fish and bunker fuel) but skilful editing has kept this well below the limit of tolerability.

For the economist, the result is a veritable treasurehouse. Generalised descriptions of the Brussels Conventions, the League of Nations Minimum List, the Standard International Trade Classification are brought together within the covers of a single volume. Information on the basis of current trade reporting of major countries of the world is coupled with a record of significant changes in the recent past.

At the risk of appearing ungrateful, the economist may suggest one gap. Professor Allen's lucid exposition of index numbers of volume and price might have been accompanied by a chapter on the measurement of elasticities. It is recognised that this subject is one in which the recent results have been largely negative. It is none the less useful to know what one cannot do with statistics.

As for the others. The student will have occasion to read and re-read these pages, unless I miss my guess, at the behest of his instructors. The statistician will turn to it for information, and perhaps as a case study in the multiplicity of demands which may be made upon a particular body of information. At the technical level he will find it elementary.

The user who may have been slighted is the businessman. A chapter like " Exports and Imports in the Domestic Setting ", by D. H. Jones, attempts too much for his benefit, as the author recognises, without advancing matters for any one else. The example drawn from United States exports of razor blades in P. J. Loftus' chapter on " Publication and the Use of National Statistics " (pp. 149-51), lamely concludes with what was obvious in the first place, that the trade returns do not constitute a sufficient basis for business decisions.

Not all objectives are of equal importance for every statistical purpose. If the needs of the economist have been placed above those of the business men on this occasion, the latter may be granted amends another time. Meanwhile the international trade economist in government or academic life with an interest in manipulating or interpreting the data will need this volume right on his desk.

C. P. KINDLEBERGER.

Contemporary Collective Bargaining. By H. W. DAVEY. Prentice Hall, New York. 1952. 532 pp.

This is a textbook written for use in the industrial relations courses that have become a standard feature in almost every American college and university.

It falls roughly into five sections; the first five chapters deal with definitions, types of bargaining relationships and the subject matter and scope of collective bargaining. Chapter six discusses the economic theory of wage determination under collective bargaining. Chapters seven to ten are concerned with such matters as the setting of piece rates, holidays with pay and other " fringe benefits", seniority systems, and pension programmes. The next two chapters deal with the procedures, techniques and machinery of collective bargaining, and the last three chapters with the implications of collective bargaining for union democracy, its effect on the problem of inflation, and finally the impact of the National Labour Relations Board and the Taft-Hartley Act on collective bargaining.

Mr. Davey's own ideas on collective bargaining are mainly reflected in the selection of authorities from whom he quotes, but he does make clear his belief that "A strong, independent and responsible trade union movement is indispensable to a healthy private enterprise economy and to a vigorous political democracy". Trade unionism in America is not only here to stay, but it has become necessary and respectable.

The least satisfactory chapters in this book are those which attempt to deal with the wider implications of collective bargaining, particularly the one on full employment and collective bargaining, which is rather superficial. The treatment of wage theory and its relation to collective bargaining is also disappointing though it does draw attention to some of the problems. In these chapters the discussion is inadequate and to some extent seems curiously unrelated to the other sections of the book.

A valuable feature is the publication in appendices of the complete texts of two of the most important collective agreements signed in America in recent years. Nothing brings out the major differences between collective bargaining in the United States and in this country more clearly than a glance at one of these documents. A British collective agreement is usually a relatively short statement setting out in a few clauses merely the basic conditions of employment. It is little more than a framework which leaves an immense amount to be filled in by local interpretation and initiative according to work rules and usually well established procedure.

The American agreement on the other hand, is a lengthy document with many sections and dozens of clauses, covering every conceivable aspect of employment. It lays down, in addition to basic wage levels, precise details as to grievance procedure, the establishment of shop committees, the use of notice boards, hiring and dismissal, the method of calculating time and piece rates, job grades, holidays with pay, health and pension schemes and the settlement of disputes.

The advantage of the American type of collective agreement is that it gives a measure of protection to both unions and employers and ensures a degree of stability in industrial relations which might otherwise be absent. But it has grave drawbacks. It tends to encourage legalistic attitudes and inhibits the growth of mutual trust and confidence. There is some recognition of these disadvantages but it is mainly confined to those who have had the responsibility for the settlement of industrial disputes.

At a recent conference of Labour lawyers, Cyrus S. Ching, the late head of the United States Conciliation and Mediation Service, opened his address by stating, much to their disapproval, that he hoped the day would come when there would be only one clause in a collective agreement which would in effect read "Company A recognises Union B". For the rest it would be left to the mutual goodwill and common sense of both sides to arrive at a wise policy of good employment practice. The British system of collective bargaining has not yet achieved that state of affairs, but it has approached much nearer to it in most industries than is the case in the United States.

B. C. ROBERTS.

Sampling Techniques. By William G. Cochran. John Wiley & Sons, New York. Chapman & Hall. 1953. xiv + 330 pp. 52s.

Sample survey theory has a purpose which should appeal to the economist: to attain maximum accuracy in estimation for a given total cost or, equivalently, to attain a given standard of accuracy at minimum cost. To achieve this purpose a large number of techniques has been developed, mainly in the past fifteen years, which enable the precision of sampling to be increased by utilising available information about the population to be sampled. If no such supplementary information is available, a simple random sample, with every unit in the population being given an equal chance of selection, is the only respectable technique. Far more commonly, something is known of the population in advance, and this information may be used in one or more of several ways.

Firstly, the population may be divided into sub-populations which are fairly homogeneous internally, but vary between themselves as much as possible, each sub-population being sampled separately. This technique, known as stratification, can result in very substantial economies. Secondly, the sub-population resulting from stratification, or the original population, may be divided into sub-units which are internally heterogeneous and vary as little as possible between themselves, the aim in this case being to concentrate sampling within a small number of these units, with resultant administrative economies. This is called multi-stage sampling. Thirdly, knowledge of variables with which the variable being studied is correlated may be used to improve the efficiency of estimation without changing the sample structure at all. Finally, and it is here that the departure from older techniques is most marked, supplementary information may be used to determine the probabilities of selection of the various units in the population in such a way that great gains in accuracy become possible. At first sight, this may seem a doubtful piece of manipulation, but in fact no breach of good scientific practice is committed, since decisions on the probability structure are always taken before sampling: the sampler chooses his weapon, but fights fair.

Professor Cochran's full theoretical account of the subject is complementary to Dr. Yates' monograph, *Sampling Methods for Censuses and Surveys*, which is much more of a practitioner's manual. Inevitably, there is lengthy algebra involved in some of Cochran's proofs, but there is no difficult mathematics—even calls on the differential calculus are few. However, a necessary prerequisite for the reader is a knowledge of the principal topics of general statistical theory, particularly a basic course on probability and some knowledge of correlation and regression theory.

There is little fault to be found with the exposition, which is smooth and natural. Occasional clumsiness of notation is the fault of the subject rather than of the writer. Rather surprisingly, Professor Cochran has not availed himself of some simplifying theoretical devices. For example, use of the rule given in section 7.17 of Yates' book would have satisfactorily unified the treatment of estimation of sampling error in multi-stage samples of all kinds, and provided the reader with guidance in cases not considered in the text. Similarly, Neyman's pioneer treatment of " double sampling " might well have been replaced by Yates' more elegant and suggestive multi-phase method.

These are small points: the book as a whole is admirable, and is strongly recommended to the student, practitioner and teacher of sampling. Social scientists, in particular, will be interested in a final chapter on non-response and bias problems in surveys. Little theoretical progress has yet been made in this field, which is likely to provide a growing point for the theory in the next few years.

ALAN STUART.

An Introduction to Linear Programming. By A. CHARNES, W. W. COOPER and A. HENDERSON. John Wiley & Sons, New York. Chapman & Hall. 1953. ix + 74 pp. 20s.

The real contribution of this series of published lectures lies in Part II—the mathematical theory of linear programming by Professor Charnes. It not only presents new material but is also a self-contained course in the underlying theory of linear programming.

Part I, by Professors Cooper and Henderson, is designed to introduce the subject to economists, engineers, statisticians and businessmen. The authors feel that the usual exposition of linear programming forces it unnecessarily into the framework of economic theory and they have therefore deliberately minimized its connections with economics. This may broaden its appeal to those sufficiently mathematically sophisticated to think in terms of the maximization of a function subject to linear inequalities. On the other hand, this approach is not perhaps the one most likely to awaken the interest of the practical economist, whose problems can often be formulated as a programme simply by systematically stating the amounts of commodities (including services, etc.) present in his system and the various ways in which they can be used. Only one example is worked through in Part I and, as considerable preliminary manipulation is performed on the data, it is possible that those of its features which are basic to linear programming may be obscured by those which are specific to that problem. It is interesting that one can formulate that particular simplified problem as a programme, directly from the initial data, in the " economics " way, and find by inspection the solution which, on the formulation in this book, requires considerable calculation. However, the authors promise a second volume containing numerous practical examples. This may well substantiate their claim that the " economics " approach is unduly restrictive, and also meet the objection that a non-mathematician may fail to obtain from this volume alone the essential features which make a problem susceptible to this type of analysis.

Without agreeing with the authors' suggestion that further refinements in the simplex method are unnecessary (a project of any magnitude yields abundant returns to improvements in calculation), it can be said that Part I of this volume is as clear and comprehensive a guide to the techniques of programming as is Part II to the basic mathematical theory.

A. H. LAND.

De Leer van de Kostprijs: The Economics of Cost Accounting Procedures. By H. J. VAN DER SCHROEFF. N.V. Uitgewers-Maatschappij " Kosmos ", Amsterdam and Antwerp. 1953. 539 pp.

This work first appeared in 1947 and the reviewer has often wondered why no publisher has yet produced an English translation. The third edition has now appeared with an " Elaborate English Summary " which is thoroughly disappointing. The summary gives no idea of the thoroughness with which the author has discussed the economic implications of various accounting treatments of the elements of cost.

In his first two chapters, Professor van der Schroeff restates the theory of value in a form which renders it highly practical as a set of principles for valuation in cost accounting. He defines costs as " units of value unavoidably sacrificed for the purpose of economic activity " and proceeds to a discussion of the various kinds of cost, with a chapter devoted to each. The discussion proceeds from the point of view of the firm.

For some economists his treatment of cost will not have laid enough stress on the subjective aspects of valuation, nor does he include the sacrifice of alternative opportunities in his definition, but his first eight chapters are a meticulous application of widely accepted economic theory to the valuation of factors of production.

In Chapter IX he deals with Basic Principles of Cost Allocation. He attacks Marginal Costing and Differential Costing, his main objection being that they are usually calculations to support a particular price policy rather than fact-finding techniques. His objections are, however, also directed against the use in price policy of the concept of marginal cost as economists understand it. He admits, in passing, that it is useful for determining the best volume of output, but he objects to the calculation of marginal costs on the grounds that in consequence of using such calculations the producer comes on the market with too low an " offer price " (aanbiedingsprijs). It is not always clear in this chapter whether Professor van der Schroeff is attacking principle or practice.

In the succeeding chapter, " The Allocation of Capacity Costs " the professor presents an exceptionally lucid argument. Idle capacity, he declares, is a loss but is no part of cost. This chapter and chapters I and II are of such excellence that these alone would justify the labour of translation and publication of the book in English.

The book is concluded with a chapter on " The Allocation of Costs to Various Costing Units " which contains an excellent discussion of joint- and by-product costs. He draws attention to the fact that it is the relative demand and selling prices that determine which is the by-product and which the main product.

The book contains a large bibliography of works in Dutch, English, French and German, a list of authors and a good subject index. It is a work which cost accountants and other executives will find of great value. Economists will find in it a wealth of illustrative material.

G. D. de Swardt.

Internationale Handels- und Devisenpolitik. By H. Rittershausen. Fritz Knapp Verlag, Frankfurt. 1953. 432 pp.

Here is a plea for freedom of economic price formation in international transactions. It is a comprehensive book that ranges from an enumeration of present-day methods of trade control (Introduction) to pure theory (Part I) and the application of this theory to past and present commercial policies of the major Powers (Part II). Incorrect exchange rates are the nigger in the wood-pile.

The principal argument (Part I) asserts the incompatibility of the two main features of neo-mercantilist policy: protection (by tariff and quotas) and exchange control. Exchange control overvalues the national currency relatively to hard currencies. (Hard currencies are defined as currencies that do not stand at a discount in the free market [p. 216]). This makes imports from hard currency countries too cheap by free market standards and exports too dear. The author argues that the modern armoury of protection is bound to raise the internal price level and so makes the currency worth less than under free trade. The two policies pull in opposite directions.

The tariff argument stresses the boomerang effects of protection through retaliation and internal cartelisation. It appears to assume equal and high elasticities of international demand and supply (p. 73) and makes little of the possibilities of net gain from protection via the improvement in the terms of trade. Of interest in the tariff section (pp. 73–120, 221–246) is a short discussion of why protection creates and perpetuates differences in standards of living (pp. 114–6); also a section dealing with the capitalisation of the gain from protection (p. 102).

The monetary analysis (pp. 121–220) is perhaps the most noteworthy part of the book. It contains a history of exchange control, with special reference to German experience. The analytical argument is the commonsense one that exports can only be furthered if trade is profitable to the domestic exporter *and* the foreign importer, and that this is impossible if the currency is given an artificial value and if its use is restricted.

F. V. Meyer.

The Role of Mergers in the Growth of Large Firms. By Fred J. Weston. University of California Press. Cambridge University Press. 1953. xvi + 159 pp. $3.50. 26s.

The main contributions made by Mr. Weston in this book are (i) a statistical study, based on 74 of the largest American companies, showing what proportion of the increase in their total assets over the half-century ending in 1948 can be directly attributed to mergers, and (ii) a second study showing, in the case of 25 of these companies, the change in their " market occupancy percentages " (i.e. their share in the total output or sales of their respective industries) over roughly the same period.

The conclusions of his first study are, briefly, that " The 74 firms studied grew in the aggregate by $28.0 billion. . . . Of this growth, about one-fourth represents growth through mergers. . . . External growth [i.e. through mergers] was less than 25 per cent. of the total growth of more than one-third of the firms ". An important element (insufficiently stressed by Mr. Weston) in the explanation of these results is simply that mergers occurred predominantly in the earlier part of the period, while the firms concerned were still relatively small (and Mr. Weston accentuates this relative smallness by measuring assets in current dollars).

The conclusions of his second study are that " the total growth of the dominant firms after 1903, the end of the first major merger movement, was relatively smaller than that of the remainder of the industry ".

Brian Tew.

The Propensity to Monopolize. (*Contributions to Economic Analysis.*) By L. J. ZIMMERMAN. North-Holland Publishing Company, Amsterdam. 1952. vii + 100 pp.

This book considers the problem why certain markets remain competitive (their propensity to monopolize is low) while others tend to develop monopolistic characteristics (their propensity to monopolize is high). The problem is interesting but the treatment rather disappointing. As an exercise in the supply and demand analysis it brings to light the following relations. Under certain conditions (linearity of the supply and demand functions) the excess of monopoly profits over competitive profits (both defined as the difference between the total revenue of the industry and the area under the supply curve) is greater (in proportion to the competitive profits) the greater is the ratio of the elasticity of supply to the elasticity of demand (at the point of the intersection of the curves). The greater is this ratio the less stable is also the market in the sense that it is more likely to develop either unstable equilibria or explosive tendencies along the cobweb reactions. The ratio of the elasticities of supply and demand is thus of special importance for the propensity to monopolize; the higher it is the more attractive is monopolistic organisation as a means of both increasing profits and stabilising the market. This conclusion tends then to degenerate into a system of generalisations not always convincing. The application of the geometrical method to the history of economic thought (with Keynes, Ricardo and Chamberlain represented as areas on a diagram !) is very ingenious, but it does not help to remove the reader's doubts about the usefulness of such concepts as for instance " the price elasticity of demand for all goods " with saving as the substitute.

S. A. OZGA.

American History and American Historians. By H. HALE BELLOT. Athlone Press. 1952. x + 336 pp. + 7 maps. 25s.

The campaign for the study of American history has now been in progress in British universities and schools for some fifteen years. Yet, despite the sustained efforts of a zealous few, the number of works on American history published on this side of the Atlantic is still extremely small. Consequently, the British student has to rely to a very large extent on works by American authors. The beginner is confronted with a bewildering mass of unfamiliar literature, the very dimensions of which are formidable. His first superficial readings may well be discouraging as attitudes and interpretations are encountered which were obviously intended for the American reader: two themes may appear disconcertingly dominant—the cult of the American legend and the worship of the American hero. If the student is looking for the historical secret of American economic success, he may find that his questions are unanswered—perhaps not even asked; that economic history seems to consist of apparently unrelated descriptions of the development of institutions; or that if interpretation is attempted, it often contains an implicit and surprisingly uncritical economic determinism, with the whole explained in terms of economics, not economics in terms of the whole.

Professor Bellot's book performs a two-fold service. Firstly he has written a guide-book which helps us to find a path through the maze of literature, pointing out the landmarks and explaining the detours as we proceed. Secondly, he has provided a comprehensive summary and penetrating analysis of the findings of recent research.

The first chapter, entitled "Some Aspects of the Recent History of American Historiography", contains the key to the rest of the book. Here we find condensed into thirty-seven pages an account of American historical writings roughly between 1890 and 1940. The subject—and the author's knowledge of it—merit a book to themselves. Professor Bellot traces the transition from the "institutional history" of the early period, with the emphasis on European origins, to the entirely introspective history which followed the appearance of Frederick Jackson Turner's frontier thesis. The writings of Turner, the author maintains, in addition to giving a great stimulus to research at the state and provincial level, both by universities and historical societies, came to dominate American historiography, as writers ranged themselves for or against the frontier thesis.

> "The result" (says Professor Bellot) "was to isolate and to atomize American history. The student turned inward, to the almost complete neglect of the external world; and within the boundaries of the United States, devoted himself more and more to the history of some particular aspect or region." (p. 35.)

It may be added, of course, that this approach was entirely appropriate to the social and educational needs of the decades which succeeded the first publication of Turner's original essay in 1893. The writing and the teaching of history has made a most important contribution to the creation of a national consciousness among the heterogeneous elements which make up American society.

The author makes his own view of the frontier perfectly clear, explicitly in the first chapter, implicitly on almost every page, providing a welcome corrective to that found in many recent publications. Whatever the significance of the frontier may have been for American political or social development, no attempt at economic analysis can possibly be adequate if it neglects to observe that, in Professor Bellot's words, "the fundamental fact of American history down to the year 1890 was the settlement of a continent" (p. 23)—as economists have been somewhat readier to acknowledge than historians. The insertion of a date was, perhaps, over-cautious. For the economist, American history provides a case-history in the development of a backward economy; the significance of the Turner thesis is the assertion that the dynamic character of American life in the nineteenth century arose out of geographic expansion, out of the optimism created by the sense of boundless horizons and the success with which the problems of physical environment were overcome, and out of the stimuli to economic growth given by the necessity of providing communications, the standardised demands of a great actual and potential market and the confidence with which the outside world placed its savings—and its surplus labour—at the disposal of the American entrepreneur.

Chapters II—VII examine the treatment in recent writings of a number of topics and indicate the modifications in interpretation which have resulted from this research; each chapter is concluded with a long bibliographical note. The chapters on "The Settlement of the Mississippi Valley" and on "Sectional Conflict" are worthy of special note.

The author admitted in his introduction: "I do not pretend that what I have written will be easily read". Few readers will be inclined to dispute this. Excessive condensation has been necessary in order to reduce the contents to seven relatively short chapters. When confronted by paragraphs which are sometimes two pages in length, the reader may perhaps be forgiven if he at first supposes that the book is one to use and work with rather than to read. It improves greatly with acquaintance until it eventually finds itself among the few ready-reference works which remain on one's desk, without ever being condemned to the oblivion of the book-shelf.

Professor Bellot does not discuss the effects on historiography of the American university system requiring the constant diversion of resources into the production of text-books. The only significant omissions from the thirty-two page bibliography at the end of the book are of the " standard texts ". Thus, many of the titles which may constitute the sum total of historical reading of American (and other ?) undergraduates are altogether missing. It is reasonable to suppose that the " text-of-the-course " system—if it does not entirely preclude the writing of good history—has had some influence on historiography.

The omission is not a serious one. " Tout comprendre " may not always be followed, as D. W. Brogan often reminds us, by " tout pardonner ", but sometimes at least it will. Professor Bellot has made a noteworthy contribution towards helping us to understand.

J. POTTER.

Housing Targets. The Third Report of the Southampton Survey. By P. FORD and C. J. THOMAS. Basil Blackwell. 1953. 56 pp. 4s.

This is the third pamphlet report on a survey, undertaken by the Department of Economics at Southampton University at the request of the Southampton County Borough Council. The previous reports are entitled *The Industrial Prospects of the Southampton Region* and *Shops and Planning*.

The methodology and scope of the survey as a whole are not explained in this report and it would be interesting to know whether a sample survey is planned to fill in some of the gaps in the existing data on housing. Housing statistics are unfortunately one of the least satisfactory parts in this country's statistical equipment. On the supply side, the number of new houses built in a given period is known, the number of old houses falling into disuse is not. On the demand side, published official figures leave us in almost total ignorance.

Thus the nature of our statistics alone makes the estimation of housing needs a difficult procedure. And added to this there are the problems of estimating future populations and of deciding on desirable housing standards. The authors of *Housing Targets* have made a valiant effort to overcome these problems and to arrive at reasonable housing targets, using only available statistics. Their targets refer to 1951, 1962 and 1971 and, for each year, estimates are worked out on three different standards. Although most of the report deals with Southampton, the methods are, in passing, applied to the country as a whole.

Whether one agrees with the estimates or not, one must welcome the care with which they have been made and the detail in which the procedure has been published. If housing targets have to be based on available data, it is probably difficult to do much better than the authors have done, and local authorities and others interested will want to study their approach. But the report shows how much we need further information on housing standards and needs, such as could only be obtained through special surveys.

C. A. MOSER.

A Textbook of Economic Theory. By ALFRED W. STONIER AND DOUGLAS C. HAGUE. Longmans Green & Co. 1953. x + 513 pp. 25s.

Any merit a new text-book may have, in a well-defined subject, can, one would think, lie simply in minor improvements of exposition of established principles and method. Yet Stonier and Hague, in spite of the existence of many excellent text-books of economic theory, have produced a book showing such clarity of exposition, as well as many novel methods of treatment of economic principles, as to deserve recognition as an important contribution to economic thought. Moreover, the authors, despite their mathematical inclinations, have succeeded, without loss of logical rigour, in explaining the methods of economic analysis with only a minimum resort to mathematical techniques, inoffensive to any student who is likely to survive a degree-course in economic theory.

In view of the overall excellence of this book, it is easier for a reviewer to mention the defects, 'for they are so few', than the merits, for they are so many (from pleasing simplifications in the theory of the firm to a masterly treatment of the "adding-up problem"). There are but two of the former that seriously disturb this reviewer and they might not count as defects in the eyes of many economists. Firstly, the familiar preference-theory approach to consumer behaviour is adopted and no mention is made of the quantitative utility approach. Is it only the post-graduate student who can be safely exposed to the marginal-utility concept after he has been adequately safeguarded by sufficient training in the modern orthodoxy? Yet, despite this questionable treatment of utility theory, the indifference-curve technique is put over with great clarity (the section on "complementarity" is indeed masterly) and none of the subsequent analysis is injuriously affected.

Secondly, Part II, which purports to be the theory of output as a whole, since it is labelled the theory of employment, consists of a summary, admirably lucid, of Keynesian orthodoxy, as if it were the only word and the last word on this topic. Clearly, a modern text-book of economic theory would not be complete without such a section on Keynes, but that is no reason for ignoring so completely the classical school which *does* attempt the analysis required and uses the tools so well described in Part I. It is, in this connection, significant that, despite the many authors listed in the Index, the name of Pigou is missing. It is of interest to note that another "classical", Marshall, does receive mention in Part I, but mainly to perpetuate a common misunderstanding of his doctrine of quasi-rent. A quasi-rent is no less rent-like because long-period equilibrium happens to exist, and while it might happen to be zero in short-period equilibrium, it is necessarily positive in the former case (except in a stationary state with zero rate of interest). No doubt the concept of the difference between actual quasi-rent and what it would be in long-period equilibrium deserves a name, but not the name "quasi-rent".

Whether or not most teachers of economic theory would regard the above comments as criticisms rather than commendations, no reader of this book, be he lecturer or bona-fide degree student, could fail to be delighted with its clear, methodical development of the subject, and old hands at lecturing in this field will, if they are wise, keep this book in close proximity to their lecture-notes.

W. E. ARMSTRONG.

A Study of Trade Between Latin America and Europe. Department of Economic Affairs, United Nations. Geneva. 1953. 117 pp. 9s.

This is a study of the direction and composition of the export and import trade of Latin America with Europe and U.S.A. There is a good deal of useful statistical material, with historical series going back from 1951 to the first World War. More than half the space of the report is given to appendices on coffee, sugar, cotton, linseed, wool, meat, textile machinery and tractors. The violent and important changes in Latin America's economic connections with the rest of the world emerge clearly. In 1913 Europe furnished two-thirds of Latin American imports and the United States one-quarter. By 1949, the European share had fallen to less than one-third and that of U.S.A. had risen to more than two-fifths. The switch of Latin American export trade from Europe to U.S.A. has been almost as marked. Many causes have contributed to this position: the cessation of the large capital exports furnished by the U.K. to Latin America before the first World War, and the entry of American capital on a large scale; two world wars; national aspirations to industrialisation. But while the causes of the present situation are clear, the future outlook is less so. The authors note the tendency for the Latin American countries' demand for dollars to outrun their dollar receipts. The experience of 1950 and 1951 " suggests that Latin America can hardly rely on being able to pay out of direct receipts for the quantity of dollar goods and services it would like to buy, even at times when primary prices are at extremely high levels and when United States capital is flowing freely " (p. 12). Europe, on the other hand, is suffering both from the loss of an important market for such products as textiles, and the decline of an important non-dollar source of primary materials such as meat, sugar and linseed. The damage to Europe (and particularly to Britain) resulting from the decline in supply of Latin American primaries has of course been mitigated by the development of alternative sources within the British Commonwealth and European overseas dependencies.

H. Makower.

Methods in Social Research. By W. J. Goode and P. K. Hatt. McGraw-Hill Book Company, Inc., New York. 1952. vii + 386 pp. 47s.

The broad features of social research methodology have become sufficiently established during the last few years to make the writing of textbooks on the subject a useful, as well as a feasible, proposition. Practically all the texts to date have come from America and of these *Methods in Social Research* is one of the latest. The authors, both of whom write from practical as well as teaching experience, attempt to " steer a course between a simple anecdotal account of research studies with their technical details, and a set of broad generalisations about research methodology ". The difficulty of such a course is that, should the treatment come too close to that of a social survey manual, it would make for dullness and unreadability. On the whole, the authors have succeeded very well in avoiding this danger, the only qualifications being that the book is divided into too many short sections and that the style at times becomes rather staccato, not to say telegraphic. But then one must remember that the book is aimed to be " understandable at the undergraduate level " and that these features may be positive advantages.

The first eight chapters are devoted to the ideas of theoretical and applied sociology, the elements of scientific method and the problems of research design. Then follows a chapter on the use of the library (by J. S. Komidar), a subject which may at first sight seem out of place here. However, researchers are generally too eager to rush into the field and collect first-hand data and this chapter may serve to remind them of the importance of first examining all documentary sources; it undoubtedly fulfils a useful purpose. Chapters 10-13 describe the standard social-survey methods of collecting information: observation, mail questionnaires, interviewing. One feels that, although the description of methods is satisfactory, there is insufficient emphasis on the problems and weak points. In the chapter on interviewing, for instance, there might have been more discussion on the reduction and measurement of interviewer bias and errors.

Among the remaining chapters are one on sampling—a subject which, considering its central importance in research methodology, receives rather scant attention—and three on scaling techniques, which are among the most useful in the book. These 60-odd pages offer one of the best elementary introductions to this subject. The next chapter on Research in Population seems somewhat out of place here. All the other chapters deal with general methods, this one with techniques in a particular field of application. Finally, there are chapters on the analysis and presentation of data.

In conclusion, this is a book which covers social-research methods very clearly and with plenty of detail. Although its orientation and illustrative material is inevitably more relevant to the American reader, the book can be recommended to the English student as a general introduction to research methods.

C. A. Moser.

SHORTER NOTICES

Scottish Journal of Political Economy. Vol. I, No. 1. Edited by A. K. Cairncross. Oliver & Boyd, Edinburgh. 1954. 104 pp. 7s. 6d.

Shortly after the foundation of the Royal Economic Society there was founded the Scottish Society of Economists. The Society did not issue a journal, its activities being confined to meetings addressed by distinguished native and " foreign " economists. The Society has now been reconstituted as the Scottish Economic Society, a title " less suggestive of exclusiveness and professional mysteries ", as the editor of its new journal remarks in his introductory article. The journal is to be issued three times a year, and, although it will be mainly concerned with the social and economic affairs of Scotland, it is hoped to include articles on all aspects of economics. Certainly the first number, which contains, among others, three competent articles on applied economics, justifies the hope that the journal will have a wide appeal. It is also interesting to know that the Society intends to publish reprints of Scottish economic classics.

Enterprise and Secular Change. (*Readings in Economic History*.) George Allen & Unwin Ltd. 1953. 32s. net.

The Economic History Association (U.S.A.) has joined the American Economic Association in sponsoring this addition to the latter's series of *Readings*. The selection is designed to show the diversity of problems studied by economic historians and to explain and illustrate their approaches to these problems. Its three Sections are headed " Business Units ", " Money and Prices " and " Method ". Papers in foreign languages have been translated, and important items by Sapori, Einaudi and Bloch will now reach a deservedly larger audience. Economic historians in this country will raise their eyebrows at some of the selected items, and the collection certainly gives little idea of the work being done in this field by British historians.

A Study of Trade Between Asia and Europe. Department of Economic Affairs, United Nations. Geneva. 1953. viii + 146 pp. 11s.

This is a study of the nature, past, present and prospective, of trade between Asia and Europe. The report contains useful statistics on the geographical pattern and commodity composition of the trade. Some analysis is given of Asia's rôle as a supplier of raw materials and earner of dollars before the war; and the changes in the world network of payments arising from Asia's increased need for imports of consumer as well as capital goods, are considered. The prospect for increased trade between Europe and Asia is held to depend not only upon those two areas, but upon a flow of American capital into Asian countries sufficient to enable them to develop their internal economies and their exports.

An Outline of Statistics. By SAMUEL HAYS. Longmans, Green & Co. Fourth Edition. 1953. vii + 289 pp. 10s. 6d.

The main change introduced in this, the fourth, edition of *An Outline of Statistics* is the much more extensive treatment of statistical sources. The sources covered relate chiefly to the economic field and their description should prove useful to the student. The chapters on statistical methods are hardly changed from previous editions and it seems a pity that the opportunity was not taken to bring some of the terminology up to date. The chapter on correlation, for instance, uses a number of terms which are rarely seen elsewhere in the modern literature and whose appearance here may confuse the reader (e.g. subject and relative; the ratio of variation; the Galton graph). This point apart, the description of methods follows traditional lines and is presented simply and with admirable clarity.

The Livelihood of Man. By HONOR CROOME AND C. KING. Christophers. 1953. x + 317 pp. 10s. 6d.

This textbook of economics is designed for a general class of reader, of which, in the words of the Preface, " pupils in the upper forms of grammar schools . . . and students for professional qualifications " form a notable part. The level of exposition is broadly appropriate to the Advanced level of the General Certificate of Education. The authors have attempted to combine a factual treatment of economic organisation with an introduction to economic theory. It may be that the method they have chosen tends to present the reader with too many conclusions about economic organisation to which he finds the qualifications only much later. In the theory, moreover, the treatment is uneven ; in particular the discussion of the elasticity of demand and of rent are very unsatisfactory. On the whole, however, there is much to commend the book as a complement to the teaching in the spheres for which it is designed.

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A Lecture on the Dollar Problem[1]

By Donald MacDougall

The title of this lecture is obviously too wide. It is impossible to deal with the whole dollar problem in fifty minutes. It is necessary to select a few aspects, and even some of these can be dealt with only superficially. I am not clear in my own mind about the answers to some of the questions I shall raise; so perhaps you will regard this as a preliminary report—a throwing out of ideas, some of which may, I hope, be at least provocative.

Some Definitions

One of the things there is no time to discuss is the definition of the dollar problem, but I must say briefly what I shall mean by it. I shall be talking about the *world* dollar problem, and not the dollar problem of Britain, the Sterling Area, or Europe; and about the *United States* dollar problem, not the problem of balancing trade between the whole of North America and the rest of the world.

I shall define a solution of the dollar problem as a situation in which there is an easy balance of payments between the United States and the rest of the world on current account, but allowing for normal long-term loans and grants. This balance must be achieved, or expected to be achieved, over a longish period, without discriminatory restrictions against American goods, and while preserving a reasonably high and free level of trade in the rest of the world, a reasonably high level of employment and rate of expansion (an important point), and reasonable terms of trade between the United States and the rest of the world.

This is, of course, an imprecise and question-begging definition. But I think this is probably inevitable because the dollar problem is partly a political one. And, if I may be allowed to say so in this School of Economics and Political Science, politics is not a very precise subject. The dollar problem is political in the sense that, for example, though it might be soluble if the rest of the world made sufficient sacrifices, yet, if it is thought politically undesirable or impracticable for these sacrifices to be made, the dollar problem remains.

I might mention in passing that, according to this definition, there can be a dollar problem even if currencies are convertible. Others have taken a different view. For example, Professor Mikesell, the American economist, has claimed that " during the 1930's there was no general dollar shortage since the key currencies were all convertible into dollars ". This is true in the sense that no special shortage of dollars was apparent to the monetary authorities of the various countries, since other currencies could be freely converted into dollars. But there may still be a real dollar problem in such circumstances, according to my definition, if convertibility is maintained only at the expense of, for example, heavy unemployment in the rest of the world, as in the 1930's, or severe import restrictions against American goods.

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[1] Delivered at the London School of Economics and Political Science on 2nd March, 1954. This version was written later from notes used during the lecture. Apart from minor changes, it is intended to be as faithful a record as possible of what was said. The statistical results are provisional. Fuller explanations and more detailed development of the arguments used are reserved for a book which it is hoped will be published by Messrs. Macmillan & Co. Ltd. in 1955.

So much for definitions. The main question I wish to consider is whether the dollar problem is chronic, whether it will be with us for the rest of our lives. But, to clear the ground, I should like to give brief answers to two preliminary questions—

First, has the dollar problem ever existed?

Secondly, does it still exist?

Has the Dollar Problem Ever Existed?

The first question may seem a strange one to a British audience that has lived through the past eight years. But it has been argued, mainly perhaps in America, but also over here, that there never can be a real dollar shortage, because it is always curable by sufficient devaluation of non-dollar currencies and sufficient deflation in the non-dollar world. I have unfortunately no time to discuss this question. I can only say, briefly and brutally, that, in my view and according to my definition, the dollar problem could not have been solved in this way, at least in the early post-war years.

Is There Still a Dollar Problem?

It is not so easy to answer my second preliminary question—is there still a dollar problem?—because there has been a great improvement since the early post-war years.

In the free world outside the United States, industrial production has nearly doubled since 1946, and is now about half as great again as it was before the war. Food production in the free world outside North America has risen by perhaps one-quarter, although it has, unfortunately, not caught up with the rise in population since before the war, especially in the Far East.

Mainly as a result of this great recovery of production in the rest of the world the United States balance of payments has become much less one-sided. In the first two post-war years—1946–47—the rest of the world paid for only one-half of its purchases from the United States by earnings in that country. In the next two years—I am taking pairs of years because of the two-year cycle that has been apparent in the American balance of payments during most of the post-war period—the fraction was two-thirds; in the following two years, six-sevenths; and in the last two years—1952–53—the rest of the world has paid for about 95 per cent. of its purchases from the United States, leaving out of account throughout military goods and services supplied free by the American Government.

This improvement has, moreover, been accompanied by, I should say, a relaxation of discriminatory restrictions against American goods, and, on the whole, of restrictions on non-dollar trade. The terms of trade have become better for the rest of the world, not worse; and there has not been much serious unemployment. There has therefore, according to my definition, been a great easing of the dollar problem.

There is also the much publicised fact that, during the fifteen months from the summer of 1952 to the autumn of 1953, the United States was actually losing gold and dollars to the rest of the world at a rate of $2½ billion per annum.

In the light of all these encouraging facts, it is tempting to think that the dollar problem has been virtually solved. I think this would be a false deduction. A gain of $2½ billion per annum is by no means excessive for rebuilding the still exiguous reserves of the non-dollar world, especially as the United States was very prosperous during the period in question. It is right and proper that a surplus of at least this size should be earned in such periods to offset deficits when the United States is less prosperous.

A margin of $2½ billion is only about 5 per cent. of the rest of the world's annual transactions with the United States, and we know from experience how quickly the position can be reversed. For example, in the year following the outbreak of war in Korea, the rest of the world was gaining gold and dollars from America at a considerably greater rate; and within a few months we were in the middle of another dollar crisis.

I therefore suggest that the margin during these fifteen months should, in prudence, be wholly discounted; and we are left with, at best, a balance. But this was not an easy balance. It was a precarious one, since it depended on, first, $2 billion a year of U.S. government loans and grants, other than military supplies. This is broadly " economic aid ", which the Randall Commission has recommended should be brought to an end as soon as possible, at least on a grant basis.

The balance depended, secondly, on nearly $2½ billion a year of American military expenditure abroad. A considerable part of this expenditure is temporary, or at best precarious (though I am not suggesting that there is any danger of a large reduction in the near future), since it consists of off-shore purchases and of expenditure on military works abroad which will, presumably, sooner or later be completed.

The balance depended in the third place on $4 billionworth of military supplies given free by the American Government. If this form of aid ceased or was reduced, it might have to be replaced, in part at least, by the recipient countries.

Lastly, the balance depended on the suppression of demand for American goods through discriminatory restrictions imposed by other countries. I do not propose to put a figure to this nor to the total of the four points I have mentioned, but I am prepared to say that, in my view, there is still a real underlying gap of, shall we say, " a good many billions of dollars ".

The gap is certainly much smaller than it was seven or eight years ago. But it is still uncomfortably large and it would be a grave mistake to think that it could be at all easily closed by devaluation or deflation or in any other way, without risking other serious difficulties.

Is the Dollar Problem Chronic?

I have answered two questions and that is enough. The dollar problem has existed and still exists. I am afraid I do not propose to answer my third and main question—Is the dollar problem chronic? —for the good reason that I do not know the answer.

You may say that this is not a very interesting or useful question to ask. For, if I am right in thinking that there is still a dollar problem, surely we shall have to carry on for the time being with the same sort of policy as has been followed in recent years, irrespective of whether the problem is ultimately soluble or not.

I do not agree with this argument. I believe that a view on the longer-run dollar problem is of great importance in framing policy. If we think the dollar problem is permanently insoluble, there may be a case for starting here and now to build some kind of permanent non-dollar bloc in isolation from America. If, on the other hand, we think the problem is not necessarily insoluble, there is a strong argument for patience and for avoiding a course that would inevitably be fraught with grave economic and political dangers.

In our policy during the next few years, it is not just what we do that matters, but the way we do it. There is all the difference in the world between (i) working with the United States for one multilateral world, or even one-and-a-half worlds (perhaps the sort of world outlined by Mr. Day in his recent stimulating book on *The Future of Sterling*), while explaining that it would be foolish to rush into it too quickly; and (ii) telling the Americans that they are impossible people to live with, that they are bad creditors and have a stagnating, fluctuating economy, and that we therefore propose to make our own independent arrangements.

Such a line would, incidentally, be rather tactless at a time when the Americans are pouring \$20–\$25 billion a year into the rest of the world, when their level of activity has been much higher and more stable since the war than anyone dared to hope, and when their barriers to imports are no higher than those of many other countries.

I therefore conclude that it is interesting and useful to ask the question: "Is the dollar problem chronic?" I do not know the answer. I am not too optimistic. But, in view of the great improvement during the past eight years, one cannot be unduly pessimistic.

I should like to deal with the question by considering four main lines of argument that have been used in the attempt to show that the dollar problem is chronic.

> *First*, the appeal to the experience of the last forty years.
>
> *Secondly*, arguments drawn from the fact that American productivity is so much higher than productivity elsewhere.
>
> *Thirdly*, arguments derived from the belief that productivity grows faster in the United States than in the rest of the world. (This type of argument is sometimes confused with the second, but is quite different.)
>
> *Fourthly*, arguments based on the whole economic and political structure of the United States in relation to the rest of the world. This type of argument examines the outlook for American exports, imports and foreign investment and, taking account of political considerations, reaches gloomy conclusions.

This is not a comprehensive list of arguments, and some of them overlap. But I hope you will accept the classification for the purposes of this lecture. I propose to remind you briefly of what the arguments are, and spend a longer time on criticisms of them. This does not mean that I am necessarily optimistic. But the arguments tending to establish the chronic nature of the dollar problem have probably received more attention in this country, and I should perhaps try to do something to redress the balance.

A. The Appeal to Past Experience

First, the appeal to past experience. It is argued that the dollar problem has been with us most of the time since 1914—for the last forty years—and there is therefore a presumption that it will continue.

The trouble with this argument is that there was no dollar problem during the prosperous period of the 1920's (say, 1923–29), at least according to my definition and, I think, according to most authorities. And the rest of the period was abnormal. It consisted of two great wars and their aftermath and one great slump, in the 1930's.

If, then, there are no more big wars and no more big slumps, there may be no more big dollar problem. At least, it would be a bold man who would prophesy chronic dollar shortage simply on the basis of the last forty years' experience, especially in view of the great improvement since the end of the second world war.

B. Productivity Higher in the United States than in the Rest of the World

The second line of argument, in its crude form, argues that, since productivity is higher in America than it is elsewhere, all American goods will be cheaper than those produced in the rest of the world. This can, of course, be easily refuted by the theory of comparative costs.

There is, however, another form of the argument which is much more serious. It is what I call the "films argument". It has been well described in a recent book by Professor Nurkse, who has drawn on the so-called "demonstration effect" of Professor Duesenberry. In simplified form the argument runs as follows:

Higher productivity in America means higher standards of living there. As a result of modern means of communication these standards are becoming better and better known in other countries, and there is more and more attempt to emulate them. This is impossible because productivity is so much lower in the rest of the world. There is thus a constant tendency for countries other than the U.S. to live beyond their means, through pressure for higher consumption today and pressure on or by governments to carry out large investment programmes to raise the standard of living tomorrow. This means inflationary pressure, a tendency to balance of payments deficit with the United States, in other words, dollar shortage.

This may well be the strongest argument for chronic dollar shortage, but I feel bound to mention some difficulties I have in accepting it fully. Drawing first on my own personal experience, the only American newspaper I read at all regularly—the *New Yorker*—is full of advertisements which seem to be largely devoted to persuading Americans to buy foreign goods, not the other way round. I sometimes wonder, too, whether there may not in time be a reaction against attempts to spread the American way of life such as that exemplified by the Coca Cola stall I saw a few years ago on the roof of Milan Cathedral.

More seriously, the argument I am discussing would lead one to expect an inverse relation between a country's standard of living and the state of its balance of payments. But this is not evident in the real world. Since the end of the war, at least, many relatively rich countries, like France, Britain and Australia, have had recurrent balance of payments difficulties, while relatively poor countries like Portugal and many of the British Colonies have had reasonably favourable balances of payments.

Nor is there any clear inverse relationship between the closeness of a country's contact with the United States and its balance of payments. The Central American republics, for example, have in general had more comfortable balances of payments since the war than many other countries with comparable standards of living but in less close contact with the United States.

We must remember, too, that Americans, as well as other people, desire a higher standard of living. They are, after all, the most exposed to high pressure salesmanship and advertisement. And we are often told that one reason for the higher American productivity is the great desire of the American worker to improve his lot, while the Briton, for example, is more content as he is.

Throughout history, moreover, the masses in most countries have been exposed to the " demonstration effect " through the sight of the very high standards of living of the rich in their midst, standards most conspicuously displayed. One wonders why a few American films and American soldiers in their country should suddenly make so much difference.

It may be, of course, that the presence of G.I.s, for example, has shown that it is possible for the *masses* to be well off, and shaken long held fatalistic beliefs in the inevitability of poverty except for the very few. But all this is extremely vague. I am straying into the realms of sociology, about which I know even less than I know about politics. Despite the questions and difficulties I have raised, some of which are not wholly fair and most of which have answers, I think there may well be a great deal in this line of argument. But I doubt whether the evidence is really strong enough to conclude that, for this reason alone, the dollar problem is necessarily chronic.

The higher level of American productivity may, of course, have another consequence. Since it leads to a higher real income per head, it may make it easier for Americans to save, and this may make possible a higher rate of increase of productivity in America. But this takes me on to the third type of argument.

C. The Faster Rate of Growth of American Productivity

The arguments connected with the faster rate of growth of American productivity have been well and elegantly analysed by Professor Hicks in his Inaugural Lecture as Drummond Professor of Political Economy in Oxford.

I am in general agreement with his first main proposition. This is, very simply, that, if American productivity is rising faster than productivity elsewhere, and American money incomes do not rise correspondingly faster or nearly so, there will be recurring balance of payments crises in other countries because their prices will be continuously getting out of line. The argument stated thus is, I believe, generally true (though not necessarily so). But I think the model used by Professor Hicks tends to exaggerate the difficulty because it assumes—

> *First*, that productivity in the rest of the world is stationary, whereas in fact it goes up quite a lot;
>
> *Secondly*, that American money wages do not normally rise as fast as American productivity, whereas in fact they often do.

Professor Hicks concludes, on the basis of these assumptions, that money wages in the rest of the world will have to fall if equilibrium is to be maintained with the United States. This would, of course, raise very difficult problems. But in fact it may not be necessary.

It is quite likely that in future American wages may rise by as much as, say, 4–5 per cent. per annum in peace time. Hourly factory earnings have risen by an average of about 4 per cent. per annum during this century, leaving out the years when America was at war (when the rise was accelerated) and the great depression of the 1930's (which caused wages to fall). Since the end of the last war American wages have been rising by, on average, as much as 7 per cent. per annum.

The problem for the United Kingdom, for example, may therefore be, not to reduce money wages, but to limit the rise to, say, 3–4 per cent. per annum, while American wages are rising by, say, 4–5 per cent. per annum. This may be very difficult indeed, but it is not necessarily an impossible task for wages policy, especially when we remember that, since the end of the war, British hourly earnings in manufacturing *in terms of sterling* have gone up no faster than American hourly earnings *in terms of dollars* despite the devaluation of 30 per cent.

Professor Hicks also analyses the consequences of different rates of growth of productivity in different industries; improvements in productivity may be what he calls "import-biased" or "export-biased". That part of his argument relevant to our problem seems to be as follows. Productivity in American agriculture is increasing relatively slowly. The United States is an exporter of agricultural products. This is bad for the rest of the world and will turn the terms of trade against them.

I find it hard to apply this argument to the present situation. Since before the war, American productivity per man-hour seems to have gone up faster in agriculture than in industry, not slower. Secondly, the United States is a net importer of agricultural products, not a net exporter; only about one-fifth of her exports consists of agricultural products. Thirdly, the terms of trade—Professor Hicks' measure of the dollar problem—have moved against the United States and not in her favour.

I find certain other difficulties in Professor Hicks' analysis. For example, I am sorry that he ignores differing income elasticities of demand for his different types of goods; I think these can be very important. And he seems at times to confuse the *dollar* problem with what I call the *British* problem of paying for our imports from all parts. But I have no time to discuss these questions. I may well have misunderstood him but, though I find his analysis most stimulating, I doubt whether, in its present form, it can be applied to the problem now before us.

I now wish to be rather unorthodox and cast some doubt on the general belief that American productivity does increase so much faster than productivity in the rest of the world—at least in peace time. I think we sometimes suffer from an optical illusion here. We can easily be misled by comparing a recent pre-war year (such as 1937 or the average of 1934–38), when the United States was depressed, with a post-war year like 1949 or 1950 when the rest of the world had not fully recovered from the war. In making comparisons of Britain and America we can also be misled if we ignore the very fast growth in the American population. This is increasing by nearly one million every four months—there are one million more Americans today than there were at the beginning of last term. The American population has risen by 25 per cent. since 1937, a year often used for comparisons with the present. During the same period the United Kingdom population has risen by only about 7 per cent.

I have been making some calculations about long-term trends in production—not productivity—in the United States and in the rest of the world (excluding Russia and China for which there are no good figures). Here are some preliminary and provisional results.

Raw Materials

Since 1913 production of raw materials as a whole has increased more quickly in the rest of the world than in the United States. This is true even if allowance is made for the growth of synthetic production and even if we include Canada with the United States and not with the rest of the world.

Food

United States production of food has, it is true, more than doubled since 1900. But the American population has risen very nearly as much, and there has been only a very small growth in food production per head of the population. The figures are less reliable for the rest of the world, but it seems likely that food production has gone up in roughly the same proportion as population.

Manufactures

During the last fifty years production of manufactures has increased faster in the United States—by about 3½ per cent. per annum against 2½ per cent. per annum in the rest of the world. But this has happened only during the two great wars, not in peace time. During the decade before the first world war it seems that manufacturing production was growing at roughly the same rate in America and in the rest of the world. During the inter-war years it was growing faster in the rest of the world—not only in the slump of the 1930's, when the U.S. was more depressed than most other countries, but also during the prosperous years of the 1920's. Since the end of the second world war production has, of course, increased much more in the rest of the world—very much faster in the early post-war period and at about the same average rate as in the U.S. in more recent years.

It is true that the United States' fast rate of growth during the wars has more than offset her slower growth in peace time. But if we try to allow for the much greater dislocation and damage caused by the wars in the rest of the world, by ruling out the years of war and only two extra years for the aftermath in each case—if we assume that these years never happened in the rest of the world—we find that the rate of growth outside America is raised from 2½ to 3½ per cent. per annum, the same as in the United States.

If we take these three main forms of physical production together (raw materials, food and manufactures) it seems that physical output in the rest of the world has increased roughly as fast as in the United States, making a modest allowance for the two wars and allowing for the faster growth of the American population.

It is, of course, possible that total output of goods *and services* per *man-hour* has increased faster in the United States, even in peace time, if (i) leisure has been increasing faster in the United States, though it is by no means certain that this has been an important factor, or (ii) the output of services has been increasing faster in America—probably more significant. In general, total output per man-hour probably does increase faster in the United States than in the rest of the world, even in peace time. But the difference may not be nearly so great as is sometimes supposed.

D. THE ECONOMIC AND POLITICAL STRUCTURE OF THE UNITED STATES IN RELATION TO THE REST OF THE WORLD

The fourth line of argument is in terms of economic and political structure. Here again I shall begin by outlining briefly some arguments —mostly rather familiar—that tend to establish the chronic nature of dollar shortage. I shall consider in turn United States exports, imports, and foreign investment.

1. *U.S. exports*

It can be argued that there will always be a large and insistent demand for American manufactures, because the Americans always have the latest things; and for American primary products, because the United States, with her vast natural resources and large supplies of capital and technology, is the one place where primary production can be rapidly expanded whenever the rest of the world goes short. And the rest of the world may well go short, at least from time to time, especially of food.

Professor Dudley Stamp, in his stimulating book, *Our Undeveloped World*, has suggested that the main scope for increasing world food production in the foreseeable future lies in North America and Russia. (There are also possibilities of large increases, percentagewise, in such countries as Australia, New Zealand and the Argentine, but these are of much less importance in absolute terms.) Leaving out Russia—at the expense of ignoring some interesting possibilities—we are left with a picture of food production growing mainly in North America while the main increase in the population to be fed, in absolute numbers, is in the rest of the world. This suggests a tendency for the rest of the world to demand American food.

2. *U.S. imports*

It is argued that the United States can produce almost anything in replacement of imports, again because of her vast natural resources, her large number of technologists who are constantly discovering substitutes for imports, and her plentiful capital which makes it possible to exploit these discoveries quickly and cheaply.

There tends, moreover, to be political pressure to replace imports, not only because of the American political system, but also because there is comparatively little opposition from consumers. The extra cost to them is often hardly noticeable because imports form so small a fraction of the national income and the additional cost of home production is often not very great.

3. *Foreign investment*

It is argued that there is no great incentive for Americans to invest abroad. This is largely, I think, because the United States is the major under-developed country in the world, and yields are therefore very high on investments within her borders. In this respect the United States today is very different from the United Kingdom in the nineteenth century.

It is also argued that the Americans have little experience of foreign investment; and since they had their fingers burnt in the inter-war years, they demand a high extra risk premium.

Lastly, if the balance on annual foreign investment and income on this investment taken together is to become more favourable for the rest of the world, American investment abroad has to increase year by year at a rate greater than the yield on foreign investments. It is argued that the latter is high, perhaps as much as 15 per cent., and that American annual investment abroad is unlikely to increase so fast. (This argument, of course, ignores the favourable effects on the rest of the world's balance of payments of American foreign investment that encourages the production of commodities which will earn or save dollars.)

COUNTER-ARGUMENTS

So much for all these rather familiar, but none the less powerful, arguments. Now may I give you some arguments on the other side —some reasons why the dollar problem may not be so difficult to solve? I wish to suggest that United States exports may be potentially vulnerable and United States imports what I call " potentially explosive ".

First, then, the potential vulnerability of American exports, taking primary products and manufactures in turn.

The United States is an important net exporter of only four major *primary products*: grain, coal, cotton and tobacco. It may be that the very large exports of grain and coal since the war—far higher than pre-war exports—have been merely a flash in the pan, the result of temporary shortage in the rest of the world resulting from the dislocation caused by the war. U.S. exports of raw cotton are threatened by synthetic production abroad. Her tobacco exports are relatively small in dollar value and production in the rest of the world could fairly easily increase faster than consumption.

American exports of *manufactures* are vulnerable because American wages are so high. They are over three-and-a-half times the British per hour, compared with only two-and-a-half times before the war. The margin is still greater if the comparison is made with many other industrial countries. But U.S. productivity is not three-and-a-half times as high in many lines ; it must always be remembered that American techniques are generally available to other countries. It may be, too, that the industrialisation of new countries will hit the United States as it has hit Britain in the past. Cars and refrigerators may prove to be the cotton textiles of tomorrow.

Now for the potentially explosive nature of American imports. This arises from the fact that many American imports are supplementary to home production and form only a marginal part of total consumption. For example, the United States draws about 5 per cent. of her iron ore supplies from abroad, 5–10 per cent. of her lumber and oil and perhaps 20 per cent. of her copper.

This means that, if the United States pursued a protectionist policy, she could easily whittle away her imports. This is one of the frightening possibilities. If, on the other hand, she pursued a reasonably liberal policy, her imports could expand greatly if consumption ran even a little ahead of production.

This is what has been happening with raw materials throughout the present century. The United States has been changing from a net exporter to a net importer of one commodity after another, and especially of oil, most of the metals and forest products. In perhaps over-simplified terms, the frontier has been reached. America has exploited her easiest mines and wells and cut down her virgin forests. The annual drain on American timber suitable for the saw-mills is now 50 per cent. in excess of the annual growth.

Taking raw materials as a whole we find that during the first half of this century American production has been increasing by roughly 1½ per cent. per annum, while her consumption has been growing by 2 per cent. per annum. Such a small difference may seem relatively unimportant but over a period of decades it can have quite striking results.

In 1900 the United States was producing about 15 per cent. more raw materials than she was consuming, the balance being " net exported ". By 1925 consumption had nearly caught up with production. By 1950 it was 10 per cent. greater. If these trends continue, American consumption of raw materials in 1975 will be nearly 25 per cent. in excess of production. (Physically, this is not unlikely, since the United States seems to be using up her reserves of nearly all important minerals, except coal, faster than the rest of the world.)

If this does happen during the third quarter of the century, a rise in total American consumption of raw materials of two-thirds (roughly the possible increase forecast by the Paley Commission) would increase her net imports of raw materials between three and four times. This is what I mean by the " explosive potentialities " of American imports. There is a kind of " scissors " effect. The curve of consumption is rising more steeply than the curve of production and the difference between the two curves—net imports—rises very much faster, proportionately, than either of the two curves.

In food the same sort of thing has been happening, but to a rather less striking extent. American food imports have trebled in quantity during this century and are now about as big as our own. The United States has changed from a net exporter to a net importer of food. Fifty years ago her exports were twice the value of her imports. Now her imports are nearly twice the value of her exports. This has been a fairly steady trend interrupted only by the two world wars and their aftermath.

I would be the first to admit that American production of food can easily go up as fast as American consumption. There is great scope for increasing yields per acre, which are far lower than in N.W. Europe. But if this were done by the method recommended by Professor Stamp —the copying of N.W. European methods, which means small-scale, mixed farming—and if this required a good deal of labour, I sometimes wonder whether American food might not become rather expensive.

But I am no agricultural expert. In practice, American food production probably will rise at least nearly as fast as consumption. I should like to emphasise, however, that even a small, temporary failure of production to keep pace with consumption could put an enormous extra demand on to world food supplies moving in international trade.

Possible Effects on the United Kingdom

This could be a serious matter for the United Kingdom. It is a sobering thought that, roughly every seven years, Americans eat an extra amount of food equal to the whole of our food imports. This is, of course, because there are so many of them, because they multiply so rapidly, and because they eat so much.

It may be objected that the United States does not import the same kind of food as we do—that they import things like coffee. My reply would be, first, that all food, including coffee, uses agricultural resources which could usually be devoted to other purposes, at least in the long run. In the second place, the United States *is* a big importer of a good many foods which Britain also buys from abroad, such as sugar, cocoa, fish, certain vegetable oils, oilseeds and oilcake. She is even a substantial importer of beef. I was rather shocked to discover recently that, in the years 1951 and 1952, American imports of beef and veal were half as great as our own. (Admittedly, these were bad years for us because of trouble with the Argentine.) But these American imports, though large in relation to ours, were only about 4 per cent. of American consumption. If, therefore, the United States were to take 8 per cent. of her beef and veal supplies from abroad instead of 4 per cent., this could deprive us of half our own imports, at least on the 1951–52 level.

When people tell me that the United States could get meat and dairy produce from abroad at only perhaps half the price paid to her own farmers, I sometimes thank providence for American agricultural protectionism.

All this reminds us that, if the Dollar Problem were solved by a large increase in American imports of primary products, this might simply reveal in all its nakedness the British (or European) Problem of paying for imports of food and raw materials in a world where demand for these is growing rapidly. We might be out of the frying pan into the fire, and have a terms of trade problem substituted for a dollar problem.

Such an outcome is, fortunately, not inevitable. We might get the best of both worlds—and solve both our problems—if primary production abroad expanded sufficiently rapidly to meet both the growing demands of America and those of Britain and other industrial countries at a reasonable price.

There is also, however, a third and alarming possibility. We might be both in the frying pan and in the fire. This could happen if the output of primary products abroad expanded so slowly, and their prices rose so much, that they priced themselves out of the American market; the Americans might find it cheaper to produce for themselves. If this happened, we could have both a dollar problem and a terms of trade problem.

It seems then that the expansion of primary production overseas may be one of the keys to both of our problems. What are the prospects? It is impossible to say, but it is not necessary to be too gloomy, at least judging by past experience.

We have seen that since 1913 the production of raw materials has increased faster in the rest of the world than it has in the United States. At the same time, consumption of raw materials has been increasing faster in the United States than in the rest of the world. The United States has obtained about one-third of her extra needs from abroad (by importing more and exporting less). The rest of the world has used over one-quarter of its extra production to "feed" the growing demands of American industry.

Food production has, it is true, increased rather more slowly in the rest of the world than it has increased in the United States. But it has at least roughly kept pace with population. The rest of the world has not become more dependent on United States supplies, as an analysis based on Professor Stamp's argument might have led one to expect.

THE PRICE ELASTICITY OF DEMAND FOR U.S. IMPORTS

One final point before summing up. Thinking about these problems has suggested to me that, contrary to popular belief, the price elasticity of demand for U.S. imports may be quite high, at least in the longer run, and *when American import prices rise*. For there are then great possibilities in the United States of (i) producing synthetic substitutes for imports, (ii) economising in the use of imported materials (switching from timber to steel, from sisal to wire; more intensive use of scrap; making tin cans without tin; and so on), (iii) using America's own natural resources. For example, if the price of imported oil rose 20–25 per cent. I understand that the vast American reserves of oil shale would become economic to exploit. Similarly, if the price of foreign iron ore rose sufficiently, it would pay to use the huge low-grade reserves in the United States.

But this relatively high elasticity of demand for American imports, when import prices rise, does not unfortunately mean that the rest of the world can easily solve its dollar problem by a small reduction in the price of goods exported to America. Because I think the elasticity is much smaller in this direction. There are various reasons for this which I have not time to mention, but, for example, if import prices fall, American producers can cut their prices and run at a loss till their equipment wears out; and this takes much longer than it takes to build, say, new synthetic factories when import prices rise. I am in fact suggesting that there is a " kinked " demand curve for American imports.

All this may, unfortunately, have a tendency to pull the American demand curve for imports over to the left. For whenever foreign prices rise—even temporarily—this may encourage a large and rapid development of substitutes and the like. But if, later, foreign prices fall, this will not restore the old demand for imports; because the new technical knowledge acquired will not be lost and the new synthetic factories take a long time to wear out. The whole comparative cost structure has in fact been altered to the disadvantage of the rest of the world.

If there is a " kinked " demand curve for American imports, this may also mean a tendency to dollar shortage for another reason. If the rest of the world were to run into *surplus* with the United States, equilibrium could be easily and quickly restored by a fairly small rise in prices in the rest of the world. But when the rest of the world has a dollar *shortage*, it may be much more difficult to restore equilibrium because a fall in the rest of the world's prices may have only a slow and painful expansionary effect on American purchases from abroad. If, therefore, there are random fluctuations in the factors affecting trade between the United States and the rest of the world, there may be longer periods of dollar shortage than the reverse—in other words, a tendency to dollar shortage.

CONCLUSION

On the main question of whether the dollar problem is chronic I am, as I have said, an agnostic. This is because there seem to me to be strong forces working in each direction, and it is hard to say which will come out on top.

It may be that the most important factor will be a tendency of the rest of the world to live beyond its means, in the vain attempt to emulate American standards. But the factors connected with economic and political structure may be equally important. If, as many would argue, these also work against solving the dollar problem, the outlook may be bleak. But if they work favourably—and I have given some reasons for thinking that this may not be impossible—they may overcome any tendency of the rest of the world to live beyond its means.

Prophecy about the dollar problem is as difficult and dangerous as prophecy about the balance between savings and investment. Those who, before the war, claimed that a tendency to unemployment was inevitable in an advanced economy have had to eat their words. It may be that those who now foresee chronic inflation will prove to be equally wide of the mark. Likewise, in my opinion, it would require a very courageous man to forecast either chronic dollar shortage or its absence during the coming decades. I for one lack the necessary courage.

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Civil Service Pay, 1875 to 1950

By Guy Routh

1. The study of Civil Service pay is rewarding for three reasons—firstly, because information is available in relation thereto which allows the construction of uninterrupted statistical series, relating to various grades and classes of labour, for a considerable number of years; secondly, because it does a great deal to fill the gaps in our knowledge of salary movements; and thirdly, because what was, fifty years ago, a very special case, has recently become much more general. A large section of the economy is now having to face problems, with regard to the determination of pay, that the Civil Service (in particular, the Post Office) has had to face since the end of the era of patronage, i.e., since the emergence of the modern Civil Service in the 1870's.

The Civil Service, local authorities, Transport Commission, National Coal Board and Gas and Electricity Authorities between them now employ some 3,860,000 workers, out of a total in civil employment (in June 1953) of 21,569,000. Thus, nearly 18 per cent. of the occupied population are in the embrace of the public sector of the economy, their pay determined by a set of forces different in important respects from that generally obtaining in the private sector.

None the less, in the long run, the Civil Service and its young companions must compete with their rival employers of the private sector—they cannot offer a rate below the market rate for more than a few years, for, if they did, their supply of labour, both as to quantity and quality, would become inadequate.

In this article, the course of pay rates for various groups of Civil Servants will be considered and compared with other variables—general wage rates, national income per occupied person, and clerical pay rates outside the Civil Service.

2.1 To display the course of pay in the period with which we are concerned, nominal and real indexes have been constructed for ten groups of Civil Servants. These groups are drawn from the General (Treasury) Classes, so called because they are general to all departments and have their pay determined by the Treasury, and from the Manipulative Grades of the Post Office and the Post Office Engineers. The indexes deal with established (i.e., permanent and pensionable) Civil Servants, except in a few cases which will be indicated in due course, but their pay has a decisive effect on that of their unestablished equivalents. Out of rather more than a million Civil Servants at the beginning of 1950, the numbers directly or indirectly represented by the indexes were as follows:—

TABLE I

GENERAL, P.O. MANIPULATIVE AND ENGINEERING CIVIL SERVANTS, 1950

	Thousands
General Administrative, Executive, Clerical and Typing Classes:	
Established	149
Unestablished	132
P.O. Manipulative	201
P.O. Engineering	72
	554

There were, besides, 55,000 members of departmental executive or clerical grades, whose rates are closely akin to those of the general classes, so that, at the end of the period of study, the indexes were applicable to 60 per cent. of the Service. The bulk of the remainder (330,000 in number) consisted of industrial staff of departments other than the Post Office, whose rates are in the main dependent on trade rates in outside employment.

2.2 There is an initial difficulty in the construction of indexes of Civil Service pay: except at the highest and lowest levels, pay consists not of a single rate but of an incremental scale, often depending on age up to 25 and thereafter on the number of years spent in the grade. This difficulty was met by a simple device. It was assumed that on each scale, as it stood on or about 1st July of each year, Civil Servants were ranged in equal numbers over twenty years, and the average of the scale was deduced from this. Thus, on a scale of 12 annual incremental points, the index would be based on a weighted average, with weights of one each for the first eleven points and nine for the final point, as if there were nine people at the top of the scale for every one at each subsidiary point. This method has been departed from only in those unusual cases where the scale itself had more than twenty annual increments.[1]

2.3 Another difficulty relates to the quality and quantity of input in the various periods, and between various offices or departments in the same period. Changes in nominal hours of work have been few and the indexes have been adjusted for them. For the clerical grades, the last major change was in 1890, when the 42-hour week was made general (seven hours, including an unspecified lunch period, for six days a week).

In 1874, though the seven-hour day was already in existence in some offices, the majority were open from 10 a.m. to 4 p.m. or 11 a.m. to 5 p.m. Outside the Service, practice varied. Evidence given to the Playfair Commission in 1874 showed that the hours of clerks on the L. & N.W. Railway, the London & Westminster Bank, and the Railway Clearing House were from 9 a.m. to 5 p.m.

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[1] The implications of this method of conversion are given further consideration in Appendix B.

Solicitors' clerks worked longer: in five "eminent firms" cited, the shortest day was 10 till 6; the longest 9.30 till 6.30 (with an hour for dinner).

Hours in the Bank of England were generally 9 till 4, while, of four insurance companies, two worked from 9.30 to 4.30, with a half-holiday on Saturdays; one from 10 until 4 and the other 10 until 4 for the winter and 9.30 to 4 for the summer.

From about 1876, the Saturday half-holiday began creeping into the Service, for in or about that year the lower division clerks of the Home Office were allowed that privilege on alternate Saturdays. By the time of the Ridley Commission in 1886, this practice was more general.

At the present time, the Saturday half-holiday is universal, the 42-hour week remains the standard for London but has been increased to 44 in the Provinces. As a result of staff shortages during and after the war, however, the normal week has been increased to 45½ hours, with overtime or "excess duty allowances" paid for the excess hours.

Hours for the Manipulative Grades have in general remained constant at 48, including meal breaks, but those for the P.O. Engineering workmen have followed reductions in outside industry: from 50½ to 48 in 1914 and from 48 to 44 in 1947, but here, it should be noted, the lunch break is not included in the tally.

Yet, while commission reports and evidence provide a voluminous literature relating to changes of hours, title and allocation of duties, it is beyond the capacity of the statistics to measure the intensity with which those duties were performed. There is evidence to suggest that, within the prescribed hours, some departments once afforded ample time for recreation, literary work or simple meditation, but that others, in particular the Post Office, demanded a good deal of application from their servants. In some offices, most of the work seems to have been left to the lowest-paid and least secure members of the staff.[1]

As in so many walks of British life, the first world war marked the end of a broader and more leisurely era. It is probable that the number of literary and scientific works privately produced at Treasury expense has declined radically and that the modern Civil Servant has to put in a good deal more effort than his Victorian counterpart in exchange for his pay. The indexes should be considered with this general qualification.

3. The basis of the Civil Service indexes is as follows:—

THE GENERAL CLASSES: MEN

3.1 *Permanent Heads of Departments*

This represents an average derived from the pay of the heads of four departments: the Treasury, Board of Trade, Inland Revenue and the Post Office.

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[1] See Anthony Trollope's *Autobiography* and *The Three Clerks* and Harrod's *Life of John Maynard Keynes*, pages 122 to 130.

3.2 *The Administrative Class*

From 1919 indexes for Assistant Secretaries, Principals and Assistant Principals have been weighted together. Prior to 1919, the index is of equivalent grades in the offices of the Secretaries of the four departments mentioned in 3.1.

3.3 *The Executive Class*

From 1876 to 1919, this index represents the pay movements of the clerks of the Second Division who, on the recommendation of the Reorganisation Committee of 1920, were transferred to the Executive Grade of the Executive Class[1], whose pay the index then follows. This presents a certain difficulty, however, since some of the work (although not the workers) of the Second Division was re-allocated to the Clerical Officers.

3.4 *Clerical Officers*

The Clerical Officers, another creation of the Reorganisation Committee, were part-heirs not only to the Second Division, but also to the Assistant Clerks, first known as Civil Service Writers, then Copyists or Abstractors. The Clerical Officers, therefore, have two roots and two branches, though neither is entirely satisfactory. In particular, the validity of the line ex-Writers is limited by the fact that much of the copying, previously done in the Copyist's fine hand, is now done by female Clerical Assistants or Typists.

THE GENERAL CLASSES: WOMEN

3.5 *Women Clerks*

This index represents the weighted average of the pay rates of women clerks in the Accountant-General's Department of the Post Office. This was a group giving unusually satisfactory continuity, having been introduced a few years before this inquiry begins and, in 1920, reclassified into the general grades of Higher Executive, Higher Clerical and Junior Clerical Officers.

THE MANIPULATIVE CLASS

3.6 *Manipulative A :*[2] *Male Telegraphists, Telephonists, and Postal and Telegraph Officers*

The line begins with Telegraphists; in 1881, the closely related grade of Counter Clerk and Telegraphist is knitted in, and in 1908, male Telephonists. The term Postal and Telegraph Officer was introduced in 1946 in place of Counter Clerk and Telegraphist.

3.7 *Manipulative B : Postmen and Sorters*

These two grades have been weighted together until they were combined in 1947.

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[1] This Class is composed of two grades: Executive and Higher Executive.

[2] For convenience, the three Manipulative indexes presented in this study are referred to as Manipulative A, B and W, respectively, while the Engineering indexes are called Engineering A and B.

3.8 *Manipulative W: Women Telegraphists, Postal and Telegraph Officers and Telephonists*

To Telegraphists and London Counterwomen and Telegraphists, were added Telephonists in 1912, when the Post Office took over the staff of the National Telephone Company.

POST OFFICE ENGINEERS

3.9 *Engineering A:*[1] *Inspectors and above*

The various grades, up to and including the Engineer-in-Chief, have been weighted together.

3.10 *Engineering B: Below Inspectors*

The main rank-and-file grades have been followed through, their titles changing from Linemen and Batterymen to Skilled Workmen and finally to Technicians and Technical Officers. From 1920, after scales had been established for Unestablished Skilled Workmen and Labourers, these two grades were included, the weight given to Labourers, in different sections of the chain, varying from $\frac{1}{5}$ to $\frac{1}{9}$, so that the index is predominantly one for skilled workmen.

THE GENERAL CONFIGURATION

4.1 Table 1 and Figure I[2] (indexes of nominal rates) in Appendix A reveal both similarities and contrasts in the pay movements of the different groups. Whilst the Administrative Class and Permanent Heads do respond to the stimuli that determine the shape of the curves, they respond only feebly and then only in two periods—the years immediately following the two world wars. Otherwise, the pattern, including that for General Wage Rates,[3] is clearly discernible, though its movements are magnified in some of the indexes and diminished in others.

4.2 Table 2 and Figure II in Appendix A show the same indexes in real terms.[4] The real indexes sometimes magnify, sometimes reverse the movements shown in the nominal indexes. To the mid-nineties, the rise is exaggerated; thereafter reversed. In the early years of each war, nominal rates rise while real rates fall; then, after 1917 and 1942, respectively,[1] both real and nominal rates rise.[2] From 1920 to 1932, the peculiarities of the pattern are explained by the Civil Service cost of living bonus, which was adjusted half-yearly according to the average cost of living index number for the preceding six months and gave 100 per cent. compensation for rises in cost of living over July 1914 to pay of up to £91 5s. 0d. per year, and decreasing percentage compensation to pay above that figure.

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[1] See footnote 2, p. 204.

[2] For the sake of greater clarity, only five of the indexes are shown in Figures I and II.

[3] The derivation of this index is given in Appendix B.

[4] The indexes for Administrative, Engineering A and Permanent Heads have been converted by the General Price Index given by Phelps Brown and Hopkins in " Wage-Rates in Five Countries, 1860—1939 ", *Oxford Economic Papers*, June 1950. This index, repeated in Table 1 of Appendix A, has been continued from 1940 to 1950 on the same basis. For the other pay indexes, the Cost of Living Index cited in Appendix B has been used : from 1875 to 1914, Bowley's index ; 1915 to 1939, the Ministry of Labour's index; 1939 to 1950, the L.C.E.S. index.

THE END RESULT

5.1 Table II shows the index numbers for 1950 for the various groups, with the average for 1876–9 = 100, and shows also the money scale averages for each group. Since chain indexes have been used, it would be unusual for the money figures to bear the relation displayed by the index, but it is none the less important at this stage to get an idea of the relative levels, in money, of the rates whose fluctuations the indexes represent.

TABLE II

CIVIL SERVICE PAY, 1876–9 AND 1950

Money average per year *1876–9*	*1950*	*Group*	*Index Nos. 1950 (1876–9 = 100)*
£	£		
1920	3,625	Permanent Heads[3]	240.8
530	1,350	Administrative	166.1
184	506	Executive	275.3
184 78	386	Clerical Officers	209.4 494.2
79	327	Women Clerks	375.4
84	321	Manipulative A	403.1
60	308	„ B	485.7
51	250	„ W	547.2
264	701	Engineering A	501.2
76	333	„ B	512.3

Four trends are revealed by the Table.

5.2 There has been a marked narrowing of differentials. Those whose scale average was below £100 in the base period have all, except women clerks, increased by at least 300 per cent., while women clerks have gained 275 per cent. By contrast, those whose scale average was

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[1] For the Administrative Class and Permanent Heads, the turn in each case comes a year or two later.

[2] This movement, due to the delayed response of nominal rates to changes in prices, is illustrated by the following figures, which show the percentage rise each year in the Cost of Living and Manipulative B indexes:—

Year	*C.O.L.*	*Manipulative B*	*Year*	*C.O.L.*	*Manipulative B*
1914/5	+23	+ 6	1918/9	+ 6	+20
1915/6	+18	+ 2	1919/20	+16	+25
1916/7	+20	+10	1920/1	− 7	+10
1917/8	+16	+24			

[3] In the Permanent Heads index, full allowance has been made for the Chorley scale in 1950, though its full implementation had been postponed. The recommendations of the Chorley Committee had been accepted in principle by the Government in February 1949.

more than £100 have all gained less than 200 per cent., with the exception of Engineers A.

Thus, the price paid for the labour of a permanent departmental head at the beginning of the period was equivalent to the price of 38 women of the Manipulative Class; at the end, the ratio had been reduced to 1 : 14.5.

The clerical grades[1] have suffered in comparison with the non-clerical grades.[2] Women Clerks show a rise of only 275 per cent. compared with 447 for the Manipulative W index. Engineers A have gained on the Executive Class in the ratio 501 : 275. If, to make the Engineering A index more comparable with that for the Administrative Class, the two lowest grades in the former are excluded (raising the money average to £484 in the base period), the Engineering A index registers 419·7 for 1950, compared with 166·1 for the Administrative Class.

The pay of women has risen in comparison with that of men, Women Clerks by 275 per cent. compared with Executive Officers 175; Manipulative W by 447 per cent. compared with 303 for Manipulative A and 385 for Manipulative B.

OUTSIDE COMPARISONS

5.3 It is possible to make a general comparison of clerical salaries, in and out of the Service, in the base period and 1950. The Playfair Commission into the Civil Service, 1874/5, collected information relating to salaries paid to male clerks in a number of concerns, including four insurance companies, the Bank of England, London & Westminster Bank and the London and North-Western Railway. Table III compares these rates with those paid in 1950.

TABLE III

CLERICAL SALARIES IN 1874 AND 1950

i. BANKS

1874		*1950*	
Bank of England	*London and Westminster*	*A Representative Large Bank (Provincial Rates)*[3]	*London Banks*[4]
On entry 18–25: £70	On entry 18–21 £80	At 18: £149.5	On entry (17): £165 to £180
Usual rate at 21: £100		At 21: £189.8	
Normal Maximum (Reached 41–44): At least £300	After 25 years: £400	Maximum (Age 32): £484.9	Maximum (without promotion): About £515

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[1] For convenience, I shall use the term *clerical* to denote all those whose training is a general education and whose tool is the pen, in contrast to manual or professional workers.

[2] The line Writers to Clerical Officers is an apparent exception, but see 3.4 above.

[3] Cited by the Office Management Association, *Clerical Salaries Analysis*, 1950.

[4] Cited by the Civil Service Alliance before the Civil Service Arbitration Tribunal, December, 1950.

ii. Railways

1875 *London and North-Western*	*1950* *British Railways (London Rates)*
Apprentice Clerks, on entry: Between £25 and £50	Junior Clerks, age 16: £130
Junior Clerks: £60 to £80	Age 21: £240
Clerks progressed to: £300	Class 1 Clerks, Max.: £500

iii. Insurance Companies

1875 *Four Insurance Companies*	*1950* *Four Insurance Companies*[2] *(London)*:
Starting pay, age 18:[1] £70	Starting pay, age 17: £155 to £160
Upper limit: £500 to £600	Maximum, age 36 to 38[3]: £525 to £600

The movements shown above are similar to those in the Civil Service, where the index range (base period 1876–1879) was from 166·1 (Administrative Class) to 375·4 (Women Clerks).[4] With 1874 = 100, the index range for the movements shown in Table III would be as follows:—

On Entry

Banks	186 to 257
Railways	260 to 520
Insurance	221 to 228

Age 21

Banks	190
Railways	300 to 400

Maximum

Banks	121 to 172
Railways	167
Insurance	88 to 120

As with the Service, the greatest advance has been in the lower reaches and there has been a pronounced depreciation of clerical labour in terms of manual or technical labour.

5.4 The index of General Wage Rates, whose contours resembled those of the Civil Service indexes, registered 479 for 1950, with 1876–9 = 100. But here a qualification is necessary. In the Civil Service, the pay scales on which the indexes are based represent rates that are both maxima and minima, whilst in outside industry the tendency is for the national rates to become actual rates only in times of falling demand for labour. When employers are competing against each other for available supplies (and, of course, competition is at its keenest in times of full employment), the national rate becomes the lower limit of a wide range of pay. In June 1948, Sir Alexander Ramsay remarked, in connexion with the engineering industry, " The average standard earnings in our industry are much higher than the nominal minimum paper rates which we describe as basic rates ".[1] This divergence was exaggerated by the policy engendered by the White Paper on Personal Incomes, etc., of February 1948, which had a marked effect in preventing increases in national agreements, but a much smaller effect on increases arranged between employers and workers on the shop floor.

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[1] In the case of one company, starting pay, age 15 to 18, was £25.

[2] Pearl, London, Royal and C.U., cited by the Civil Service Alliance, *op. cit.*

[3] All single scales, except the Pearl, where £725 was reached at the age of 50, at the top of the last of three scales.

[4] Excluding the Writer-Clerical Officer line.

On the other hand, the base period, 1876–9, was one of mounting unemployment, at the end of which the trade union unemployment rate was at its peak for the years 1856 to 1920. Thus it is probable that the rates on which the index is based coincided with those actually paid.

The magnitude of the adjustment called for may be gauged by the index of hourly earnings calculated half-yearly by the Ministry of Labour. For April 1950, with October 1938 = 100, this index registers a rise of 22 per cent. above the L.C.E.S. wage rate index (239 compared with 196). The earnings figure is inflated, but probably by not more than 3 per cent., because a portion of earnings in 1950 represents overtime pay.[2] Reducing the earnings index by 3 per cent., the figure for 1950 is reduced to 231·8, and we get an adjusted figure for the General Wage Index (1876–9 = 100) of 566·5 for 1950. The end result of the movement of wage rates outside the Service is thus in keeping with that of internal rates, though probably in excess of them.

5.5 The index of National Income per Occupied Person[3] shows a higher increase than any of the Service indexes, except that for Manipulative W (541 compared with 512 for Engineering B, 403 for Manipulative A, 275 for the Executive Class). Thus society as a whole, in 1950, was giving a smaller proportion of its product to its Civil Servants than in the period 1876–79.

5.6 Table 4 shows the end result in real terms, converted as described above.[4]

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[1] During negotiations with the Confederation of Shipbuilding and Engineering Unions.

[2] In October 1938, average hours were 47.7 for men and 43.5 for women, which indicates that, with a standard 48 hour week, very little overtime was being worked. In April 1950, women averaged 41.9 hours and men 47. Taking the standard week as 44 hours, this would entail an average of 3 hours overtime for men, which, at " time-and-a-half ", would make the week equivalent to 48½ ordinary hours. The hourly rate, in other words, would be inflated by just over 3 per cent.—three hours in 94.

[3] The derivation of this index is explained in Appendix B.

[4] See footnote 4, p. 205.

TABLE IV

INDEX OF REAL SALARY OR WAGE RATES AND REAL NATIONAL INCOME PER OCCUPIED PERSON, 1950

1876–79 = 100

Permanent Heads	75
Administrative Class	51
Executive Class	102
Clerical Officers	77 183
Women Clerks	139
Manipulative A	149
„ B	180
„ W	202
Engineering A	185
„ B	190
General Wage Rates	177 210
National Income per Occupied Person	170

Not only, then, has there been a devaluation of clerical labour in terms of other sorts of labour, but also in terms of goods. While the Women Clerks in 1950 received a considerably higher real return for their work than their predecessors of mid-Victorian times, the Executive Class just held its own and the Administrative Class, Permanent Heads, Railway, Bank and Insurance Clerks and, on this evidence, most clerical and administrative workers, received in 1950 a real return considerably smaller than in 1876–9. While average national income per occupied person was 70 per cent. more in real terms, an Assistant Secretary was receiving half what his grandfather might have got 75 years before.

What was the reason for this debasement of the clerical coin? The decisive influence, no doubt, was that series of measures, beginning with the Elementary Education Act of 1870, which made literacy the right of all instead of the privilege of the few.[1] This, with the high prestige of the clerk *vis-à-vis* the artisan, his lack of trade union organisation, and inadequate compensatory changes on the demand side, has caused the clerk to fall behind in the material progress of society in general.

The lot of the Manipulative and Engineering Grades, on the other hand, and of wage earners outside the Service, is substantially better than it was 75 years ago and shows an improvement ranging from nearly 50 per cent., in the case of Manipulative A, to 90 per cent. in the case of Engineering B and 102 per cent. in the case of Manipulative W. Outside wage rates, as adjusted in paragraph 5.4, show an improvement of 110 per cent.

THE YEARS BETWEEN

6.1 In the above we have taken a giant stride over a period of almost 75 years. In uncovering the process by which the indexes achieved their

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[1] In 1886, before the Ridley Commssion into the Civil Service, Sir Algernon West testified: " The improvement is so rapid in the education of young men now, that I do not hesitate to say that the education of the lower division clerk of today is far superior to my own, who went into the service as a junior clerk 36 years ago ".

(for our purpose) final resting place, it is useful to divide the 75 years into four periods, as follows:—

1. 1876–9 to 1913
2. 1913 to 1924
3. 1924 to 1938
4. 1938 to 1950

Thus we have two periods of relative stability interspersed with two periods of violent change resulting from war and its aftermath. Table V summarises the differences between the first and last years of each period.

TABLE V

CHANGES IN REAL AND NOMINAL RATES OF PAY AND NATIONAL INCOME FOR FOUR PERIODS BETWEEN 1876 AND 1950

End year ..	1913		1924		1938		1950	
Base year ..	1876/9		1913		1924		1938	
	Nominal	*Real*	*Nominal*	*Real*	*Nominal*	*Real*	*Nominal*	*Real*
Permanent Heads ..	101.6	101.6	160.1	88	100.0	117	148.0	72
Administrative ..	103.4	103.4	133.7	74	93.7	109	128.0	62
Executive	105.8	110	196.6	115	99.9	116	132.3	64
Clerical Officers	"	"	144.6	85	89.0	99	153.7	84
	148.8	155	242.6	142	"	"	"	"
Women Clerks ..	140.0	146	202.8	119	92.2	103	143.2	78
Manipulative A ..	123.4	128	175.3	103	98.1	109	151.2	82
" B ..	138.4	144	186.4	109	97.0	108	193.9	106
" W ..	151.1	157	220.9	129	88.9	99	184.3	100
Engineering A ..	177.9	178	199.8	110	100.9	118	139.5	68
" B ..	125.5	131	226.2	132	91.4	102	206.6	112
Shorthand-Typists ..	—	—	238.0	139	87.0	97	175.1	95
General Wage Rates	119	124	196	114	104	116	197	107
" " Adjusted " ..							232	126
N.I. per O.P. ..	155	155	152	84	107	125	211	103

6.2 While the Playfair Commission recorded some evidence about salaries outside the Service in 1874, the Macdonnell Commission into the Civil Service did likewise for the year 1913. For the period 1924 to 1938 a series of indexes, compiled by Miss Joan Marley, is available.[1] We know something, then, of the scale of movements between 1875 and 1913, 1924 and 1938, and 1875 and 1950.

For the period 1914 to 1923, the Anderson Committee[2] collected a great deal of information with regard to salary movements outside, but did not publish it. We have their assurance, however, that outside movements were not " out of scale " with movements of relative grades within the Service. With this gap filled, it is possible to gain a picture of the general magnitude of salary movements in the four periods.

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[1] " Changes in Salaries in Great Britain, 1924—1939," *Journal of the Royal Statistical Society*, Vol. CIII, Part IV, 1940.

[2] The Anderson Committee into Remuneration, etc., in the State Service, 1923.

TABLE VI (A)

CLERICAL SALARIES IN 1875 AND 1913

i. BANK OF ENGLAND

1875			*1913*
£70	Commencing pay, 18–25	Commencing pay, 18–22	£100
£100	Usual pay at 21	After 3 years	£110
£300	At 41–44	After 20 years	£300 (Av.)

ii. L. & N.W.R.

£25–50	Apprentice Clerks	Age 14. London ..	£25
		Provinces ..	£20
£60–80	Junior Clerks	At 21	£70
£300	Progressing to about	1st Class, 40–45	£200

TABLE VI (B)

INDEX OF SALARY RATES, 1938

(*1924 = 100*)

	1938 (*Dec.*)	
	Nominal	*Real*
General Salary Rates	98.9	110
Finance	95.8	107
Civil Service[1]	92.2	103
Local Authorities..	98.9	110
Transport	100.2	111

6.3 Tables V and VI indicate the periods in which the vicissitudes of fortune of the various groups took place. To summarise the position, Table VII shows the deviation for each Civil Service group from the unweighted mean real index for all the groups in the end-year of each period.

TABLE VII

DEVIATION FROM THE UNWEIGHTED AVERAGE REAL INDEX IN EACH OF FOUR YEARS

End year	1913	1924	1938	1950
Base year	1876–9	1913	1924	1938
Permanent Heads	−34	−22	9	−11
Administrative	−32	−36	1	−21
Executive	−25	5	8	−19
Clerical Officers, ex-2nd Div. ..	„	−25	−9	1
„ „ ex-Writers ..	20	32	„	„
Women Clerks	11	9	−5	−5
Manipulative A	−7	−7	1	−1
„ B	9	−1	0	23
„ W	22	19	−9	17
Engineering A	43	0	10	−15
„ B	−4	22	−6	29
Shorthand-Typists (not included in average)	—	19	−11	12

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[1] This is Miss Marley's index.

In the first period, to 1913, the technicality factor (the inverse of the clerical factor) is actively at work in favour of the Engineering A and against the Permanent Heads, Administrative and Executive groups. The poverty factor has helped the ex-Writers (who began the period at £78 a year), Women Clerks and Manipulative B and W; the femininity factor has helped the Women Clerks and Manipulative W.

In the second period, to 1924, the technicality factor has again been at work, but so have the poverty and femininity factors, so that Engineering A moved with the mean and was outstripped by Engineering B, the Permanent Heads and Administrative groups suffered a further severe decline and the women registered a further relative advance of similar magnitude to that of the first period.

In the inter-war period these trends are reversed—the poverty and femininity factors are less than unity. There has been much less change, but what there has been is consistently against the lower-paid sections of each group (with the exception of the Administrative and Executive groups, where the differential has been narrowed). Where the poverty and femininity factors operate together, the relative fall has been most marked.

In the final period, the range of dispersion is again wider, though less so than in the first two periods, and the trends of the third period are once again reversed. *All* clerks, except the Clerical Officers, suffer a further decline, but with a further narrowing of differentials (but note that the gap between Permanent Heads on the one side, and the Administrative and Executive Groups on the other, has again widened). Differentials in the Manipulative group have narrowed (though not between Manipulative B and W). For the first time, the Engineering A group has fallen below the average, while, as in the second period, Engineering B has recorded a substantial relative advance.

6.4 The similarity between movements in clerical salaries inside and outside the Service has been marked. In the first period, Tables V and VI (A) show that money rates were very similar at the beginning of the period and in 1913. The same is true of the period from 1924 to 1938 (compare Tables V and VI (B)). In the case of wage rates outside the Service, the rise in the first period, to 1913, was less than that of wage rates within the Service—markedly so in comparison with the Manipulative groups. In the second period, to 1924, Engineering B rose substantially more, but Manipulative A and B less than general rates. In the inter-war period, Service wage rates suffered a relative decline (of nearly 14 per cent. in the case of Engineering B) and in the final period the decline is continued, in relation to the General Wage Index as adjusted.

6.5 In the first period, the Index of National Income per Occupied Person registers a rise considerably in excess of most of the salary or wage indexes. In the second period, the position is reversed. In the third and fourth periods, National Income again shows a relative rise, with the exception only, in the fourth period, of the adjusted figure for General Wages.

Looking at the indexes for real rates, it appears that a rise in real national income per occupied person is no guarantee of a general rise in real wages and salaries, or vice versa. Only in the first period did all the real indexes move in the same direction. In the second period, while the N.I. real index registers a fall, most of the indexes for real pay register a rise. This relation is reversed in the third period, to 1938, while in the final period the dispersion is much more random. Thus, while the secular trends have been upwards, the shorter term relationship seems to be indeterminate.

6.6 In the two war periods there is a striking correlation between nominal pay rates and the cost of living, sharp rises in the latter (and a sharp fall after the first world war) trailing nominal pay rates after them. Between the wars, until 1932, the Civil Service Cost of Living Bonus was a function of the Cost of Living Index—even to the extent of reflecting seasonal fluctuations in the latter.[1] In the first world war bonuses were decided by the Civil Service Arbitration Board; then, in 1920, the sliding scale was established by a committee of the National Whitley Council, while, for the second world war, the instrument was the Civil Service Arbitration Tribunal. Based on the same principle as progressive taxation, cost of living allowances are usually designed so that the burden of rising prices falls more heavily on the higher-paid than the lower-paid. This was the strongest cause of the narrowing of differentials in the two war periods, when nominal basic rates changed very little.[2]

THE CLIMACTERICS OF 1895 AND 1935

7. In their study, *Wage Rates in Five Countries, 1860–1939*,[3] Professor Phelps Brown and Miss Hopkins note what they call a " late nineteenth-century climacteric " in the trend of real wage rates in France, Germany, the United Kingdom and the United States. They quote 1897 as the approximate mid-point of the check to the rise in real wage-rates in the United Kingdom. It is interesting to observe a similar climacteric in Civil Service real rates. Table 2 in Appendix A shows that real General Wage Rates reached a high point of 132 in 1896 (1876–9 = 100), then fell, then momentarily touched 133 in 1899, a

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[1] The formula worked in such a way that the bonus was highest in summer, when prices were low, and lowest in winter when they were high.

[2] The C.S. Arbitration Board, established in 1917, at first awarded absolutely more to the lower paid; then only relatively more, until in March 1919, they awarded a general bonus of £60 per year plus 20 per cent. of salary; i.e., at £100 per year, bonus would be 80 per cent. of basic salary; at £200 per year, 50 per cent. and so on. From 1920 to 1932, the Civil Service bonus compensated for the rise in the cost of living over that of July 1914 as follows: on that portion of salary up to £91 5s. 0d., complete compensation; on the next portion, up to £200, 6/13ths; thereafter, 9/26ths. There was a ceiling of £750, which was reduced in September 1921, in common with all bonuses on basic pay above £500.

[3] *Op. cit.* See also, Phelps Brown and Handfield-Jones, " The Climacteric of the 1890's," *Oxford Economic Papers*, October 1952.

point that they did not reach again until after the first world war. The year of the highest real rate for the various Civil Service groups in the same period was 1895 for the Permanent Heads and Administrative group, 1897 for Manipulative B and W and the Engineers, while the rest achieved a plateau in 1895/6.

After the first world war a similar climacteric appears in 1935, both for Civil Service real pay and outside real wage rates. Table VIII shows the relation of the real pay of these peak years to 1950.

TABLE VIII

REAL PAY AND REAL NATIONAL INCOME PER OCCUPIED PERSON, 1935 AND 1950

1895 = 100

	1935	1950	
Permanent Heads	88	59	
Administrative	74	42	
Executive	111	74	
Clerical Officers, ex-2nd Div.	72	56	
„ „ ex-Writers	124	96	
Women Clerks	133	98	
Manipulative A	103	97	
„ B	117	114	
„ W	141	129	
Engineering A	122	87	
„ B	133	138	
General Wage Rates	127	162	(As adjusted)
N.I. per Occupied Person	111	121	

Thus we reach the alarming conclusion that all the Civil Service groups except Engineering B were receiving lower real rates in 1950 than in 1935, and that all except Manipulative B and W and Engineering B were receiving lower real rates in 1950 than in 1895 ! By contrast, General Wage Rates (as adjusted in paragraph 5.4) show a rise of over 60 per cent. in 1950 compared with 1895, while National Income per Occupied Person shows a rise of over 20 per cent.

APPENDIX A

TABLE 1

INDEX OF CIVIL SERVICE NOMINAL SALARY AND WAGE RATES, ETC., 1875 TO 1950

Year	Permanent Heads	Administrative	Executive	Clerical Officers Ex-2nd Div.	Do. Ex-Writers	Women Clerks	Manipulative A	Manipulative B	Manipulative W	Engineering A	„ B	General Wage Rates	Cost of Living	General Prices	National Income per Occupied Person
1875	100.0	102.9	135.5		100.0	100.0	100.0	100.0	100.0	99.2	—	104	104	106	102
6	„	103.4	100.0		„	„	„	„	„	„	100.0	103	„	104	103
7	„	98.8	„		„	„	„	„	„	„	„	102	„	103	„
8	„	„	„		„	„	„	„	„	100.7	„	99	98	98	100
9	„	„	„		„	„	„	„	„	„	„	97	95	95	94
1880	101.6	„	„		„	„	„	„	„	„	„	„	99	98	99
1	„	„	„		„	111.0	107.0	112.5	112.1	„	„	„	97	96	101
2	„	„	„		„	„	„	121.1	„	140.0	105.1	„	96	„	103
3	„	„	„		„	„	„	„	„	„	„	98	„	„	105
4	„	„	„		„	„	„	„	„	„	„	„	91	91	100
5	„	96.0	„		„	„	„	„	„	140.1	„	97	86	86	97
6	„	„	„		„	„	„	„	„	„	„	„	84	84	„
7	„	„	„		„	„	„	„	„	„	„	„	82	83	99
8	„	„	„		„	„	„	„	„	147.1	„	„	„	„	105
9	„	„	„		148.9	„	„	„	„	„	„	100	84	85	111
1890	„	96.4	107.9		„	„	119.6	„	121.9	„	„	104	„	86	116
1	„	„	„		„	„	„	123.5	„	„	„	„	„	„	113
2	„	96.5	„		„	„	„	„	„	165.3	107.5	„	85	„	110
3	„	95.5	„		„	„	„	„	„	„	„	103	84	85	107
4	„	96.9	„		„	„	„	„	„	„	„	„	80	81	109
5	„	„	„		140.3	„	„	„	„	„	109.2	102	78	80	113
6	„	„	„		„	„	„	„	„	165.1	„	103	„	81	115
7	„	97.6	„		„	„	117.0	132.4	132.5	171.5	130.9	104	80	„	117
8	„	„	„		„	„	„	„	„	172.8	„	106	82	83	121
9	„	„	„		„	„	„	„	„	„	„	108	81	83	126
1900	„	„	„		„	„	„	„	„	„	„	112	86	89	131
1	„	99.3	„		„	121.5	„	„	„	„	„	111	85	88	127
2	„	„	„		148.0	„	„	„	„	172.9	„	„	„	87	„
3	„	„	„		„	„	„	„	„	„	„	110	86	88	124
4	„	101.2	„		„	„	„	„	„	„	„	109	87	89	125
5	„	101.3	„		151.6	„	120.8	136.4	135.7	„	„	„	„	„	128
6	„	„	„		„	„	„	„	„	177.6	„	111	„	91	135
7	„	„	„		„	„	„	„	„	„	„	„	90	93	141
8	„	„	105.8		„	140.0	123.4	138.4	151.1	„	132.5	„	87	91	132
9	„	101.7	„		148.8	„	„	„	„	„	„	„	88	„	134
1910	„	101.3	„		„	„	„	„	„	„	„	„	90	93	139
1	„	„	„		„	„	„	„	„	„	125.5	112	91	95	142
2	„	102.0	„		„	„	„	„	„	177.9	„	115	94	97	149
3	„	103.4	„		„	„	„	„	„	„	„	119	96	100	155
4	„	„	„		„	144.7	126.3	149.2	„	180.9	135.4	„	94	98	147
5	„	„	„			152.6	134.0	158.5	159.5	183.4	145.8	128	116	117	—
6	„	„	107.6			155.8	136.7	162.2	162.4	184.5	149.2	140	137	137	—
7	„	104.6	112.1			161.1	150.1	178.0	182.6	191.4	164.5	166	165	171	—
8	„	109.4	133.3			186.3	184.7	221.0	221.2	252.8	204.4	212	191	204	—
9	„	133.6	160.1			223.6	226.3	264.4	266.2	321.2	283.3	255	203	233	—
1920	188.8	172.3	279.4	191.6	451.9	319.9	279.6	330.1	434.5	429.0	350.4	304	235	287	367
1	„	186.3	307.0	212.2	500.7	358.1	312.3	364.5	489.5	471.4	393.7	333	213	218	287
2	162.7	149.3	251.7	153.0	361.0	318.9	239.6	288.5	382.6	391.6	306.9	255	172	186	246
3	„	138.3	208.1	„	„	284.0	216.4	258.1	333.9	355.6	271.1	228	163	179	242
4	„	„	„	„	„	„	„	„	„	„	„	233	164	181	235
5	„	„	„	„	„	„	„	„	„	„	„	„	173	177	„
6	„	„	„	„	„	„	„	„	„	361.6	„	236	162	174	230
7	„	„	„	„	„	„	236.2	280.5	350.1	363.3	„	„	157	166	242
8	„	134.9	219.6	146.7	344.7	270.3	224.5	265.7	317.0	345.3	256.4	231	156	„	239
9	„	„	„	„	„	„	„	„	„	„	258.1	„	154	164	„
1930	„	„	„	„	„	„	„	„	„	„	261.6	229	148	157	225
1	„	128.7	205.8	135.4	319.4	250.0	205.4	243.9	288.8	323.2	239.6	226	140	145	206
2	„	126.6	201.1	132.2	311.8	243.2	199.3	236.7	279.6	315.2	230.7	222	135	140	199
3	„	„	„	„	„	„	„	„	„	„	„	219	132	138	209
4	„	128.2	203.3	133.9	315.8	246.7	203.6	241.6	283.9	320.4	238.3	„	„	„	216
5	„	129.2	206.2	135.2	319.0	255.7	212.3	250.4	296.9	348.7	247.9	224	135	144	225
6	„	129.7	„	136.2	321.3	253.5	212.3	„	„	358.0	„	229	138	147	239
7	„	„	208.0	„	„	258.4	„	„	„	359.1	„	238	145	155	249
8	„	„	„	„	„	262.1	„	„	„	„	„	243	147	„	251
9	„	130.2	„	136.4	321.7	„	226.2	264.9	317.0	„	262.3	247	150	160	267
1940	„	„	208.9	138.7	322.6	263.2	240.8	285.5	341.3	366.7	285.2	272	175	189	302
1	„	130.5	212.1	146.9	346.6	278.6	255.9	304.4	354.6	375.5	303.1	296	191	206	340
2	„	„	216.5	150.9	356.0	286.7	266.5	316.6	367.2	381.7	316.2	318	204	226	363
3	„	132.8	224.9	158.2	373.2	297.6	277.8	332.3	385.6	397.8	335.9	335	210	237	384
4	„	136.4	235.9	164.0	386.2	305.7	284.3	339.7	395.9	419.5	343.3	355	214	243	397
5	„	140.4	241.4	169.0	398.9	314.3	295.7	353.8	408.1	428.6	355.9	374	217	245	403
6	185.5	145.9	253.9	178.7	421.6	354.6	356.1	427.5	477.1	447.0	383.7	406	220	254	406
7	„	„	„	190.4	449.4	355.1	„	„	„	460.9	465.5	425	235	276	448
8	„	150.0	275.3	„	„	361.1	374.9	459.7	523.2	„	486.2	457	254	299	489
9	„	„	„	„	„	„	403.1	485.7	547.2	464.2	„	470	261	308	509
1950	240.8	166.1	„	209.4	494.2	375.4	„	„	„	501.2	512.3	479 566*	270	319	541

* Adjusted

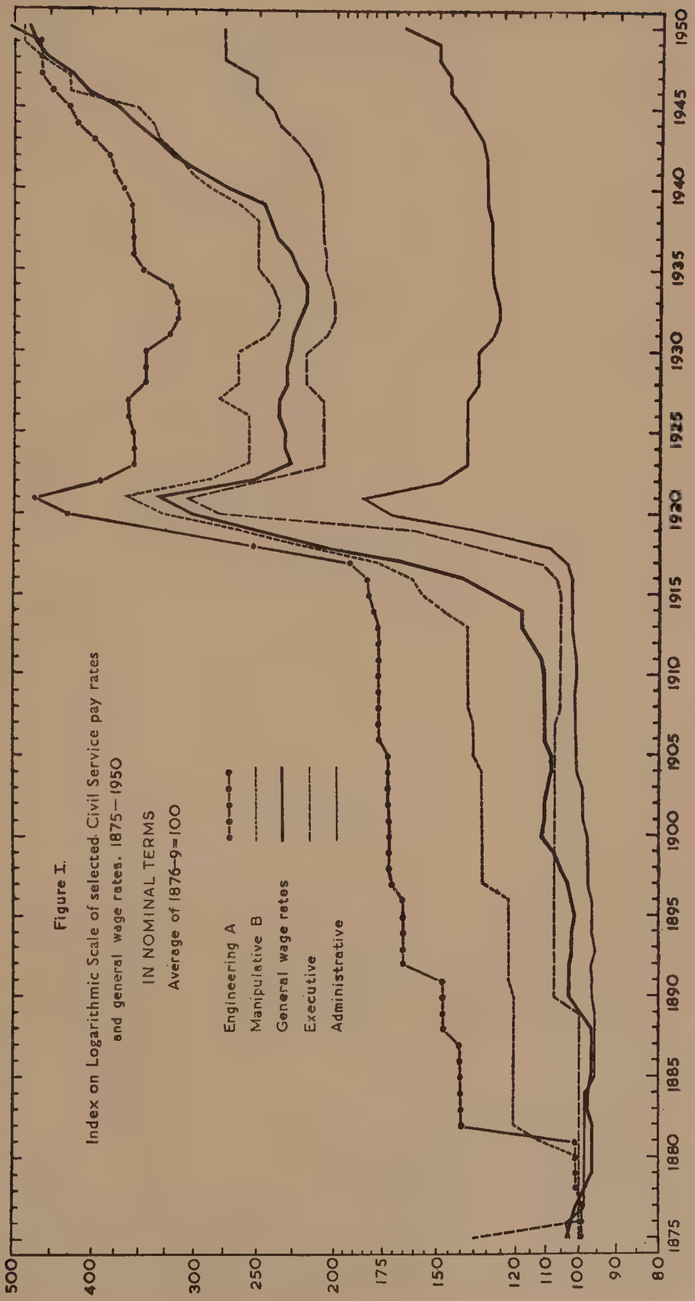

Figure I.

Index on Logarithmic Scale of selected Civil Service pay rates and general wage rates. 1875—1950

IN NOMINAL TERMS

Average of 1876–9=100

TABLE 2

INDEX OF CIVIL SERVICE REAL SALARY AND WAGE RATES, ETC., 1875 TO 1950

AVERAGE OF 1876-9 = 100

Year	*Permanent Heads*	*Administrative*	*Executive*	*Clerical Officers ex-2nd Div.*	*Do. ex-Writers*	*Women Clerks*	*Manipulative A*	*Manipulative B*	*Manipulative W*	*Engineering A*	„ *B*	*General Wage Rates*
1875	94	97	130		96	96	96	96	96	95	96	100
6	96	99	96		96	96	96	96	96	95	96	99
7	97	96	96		96	96	96	96	96	95	96	98
8	102	101	102		102	102	102	102	102	103	102	101
9	105	104	105		105	105	105	105	105	106	105	102
1880	104	101	101		101	101	101	101	101	102	101	98
1	106	103	103		103	114	110	116	115	104	103	100
2	106	103	104		104	115	111	126	117	146	109	101
3	106	103	104		104	115	111	126	117	146	109	102
4	112	108	109		109	121	117	132	122	153	115	107
5	118	112	116		116	129	124	140	130	163	122	113
6	121	114	119		119	132	127	144	133	167	125	115
7	122	116	122		122	135	130	148	137	171	128	118
8	122	116	122		122	135	130	148	137	179	128	118
9	119	113	119		177	132	127	144	131	175	125	119
1890	118	112	128		177	132	142	144	145	175	125	124
1	118	112	128		177	132	142	147	145	175	125	124
2	118	112	127		176	131	141	146	144	195	127	123
3	119	112	128		177	132	142	147	145	197	128	123
4	125	120	135		186	139	149	154	152	207	134	129
5	127	121	138		191	142	153	158	156	212	138	131
6	125	120	138		191	142	153	158	156	211	138	132
7	125	120	135		186	139	149	165	166	214	164	130
8	122	117	132		182	135	146	161	162	211	160	129
9	122	117	133		183	136	147	163	163	213	161	133
1900	114	110	136		173	129	139	154	154	200	152	130
1	115	113	127		165	143	138	156	156	204	154	131
2	117	114	127		175	143	138	156	156	204	154	131
3	115	113	125		172	141	136	154	154	201	152	128
4	114	114	124		170	140	135	152	152	199	151	125
5	114	114	124		174	140	139	157	156	199	151	125
6	112	111	124		174	140	139	157	156	204	151	128
7	109	109	120		168	135	134	151	151	197	145	123
8	112	111	122		174	161	139	159	174	204	152	128
9	112	112	121		170	160	138	158	172	202	151	127
1910	109	109	117		165	155	134	154	168	197	147	123
1	107	109	115		162	153	132	151	165	194	137	122
2	105	105	112		158	148	128	147	160	189	133	122
3	103	103	110		155	146	126	144	157	185	131	124
4	104	105	112		158	153	134	158	160	192	144	126
5	87	88	91		—	131	115	136	137	158	125	110
6	74	75	79		—	114	100	118	119	135	109	102
7	59	61	68		—	98	92	109	111	117	100	101
8	50	54	69		—	97	96	115	115	131	106	110
9	44	57	78		—	110	111	130	130	157	139	125
1920	66	60	120	82	194	138	120	142	187	184	151	131
1	87	85	144	100	235	168	147	171	230	222	185	157
2	87	80	146	89	209	185	139	167	222	227	178	148
3	91	77	127	93	220	173	132	157	204	217	165	139
4	90	76	127	93	220	173	132	157	204	217	165	142
5	92	78	121	89	209	165	126	150	194	206	157	135
6	93	79	129	95	224	176	134	160	207	220	168	146
7	98	83	133	98	231	182	151	180	224	233	174	151
8	98	81	141	94	221	173	144	170	203	221	164	148
9	99	82	143	95	224	176	146	173	206	224	168	150
1930	104	86	149	100	234	184	153	181	216	235	178	156
1	112	89	146	96	227	177	146	173	205	229	170	160
2	116	90	149	98	231	180	147	175	207	233	171	164
3	117	91	153	100	237	185	151	180	212	240	175	166
4	117	92	155	102	240	187	155	184	216	244	181	166
5	112	89	153	100	236	189	157	185	220	258	183	166
6	117	88	148	98	231	183	153	180	214	258	178	165
7	106	84	144	94	222	178	146	173	205	248	171	164
8	106	84	141	93	218	178	144	170	202	244	169	165
9	101	81	139	91	216	176	152	177	212	241	176	165
1940	86	69	119	79	184	150	137	163	195	209	163	155
1	80	64	110	76	180	145	133	158	184	195	158	154
2	72	57	106	74	174	140	131	155	180	187	155	156
3	68	56	108	76	179	143	133	160	185	191	161	161
4	67	56	111	77	182	144	134	160	186	197	161	167
5	67	58	111	78	183	145	136	163	188	197	164	172
6	72	57	114	80	190	160	160	192	215	201	173	183
7	67	53	109	82	193	153	153	184	205	198	200	183
8	61	49	107	74	175	141	146	179	204	180	190	178
9	59	48	105	72	171	137	153	185	208	176	185	179
1950	75	51	102	77	183	139	149	180	202	185	190	{177 {212*

* Adjusted

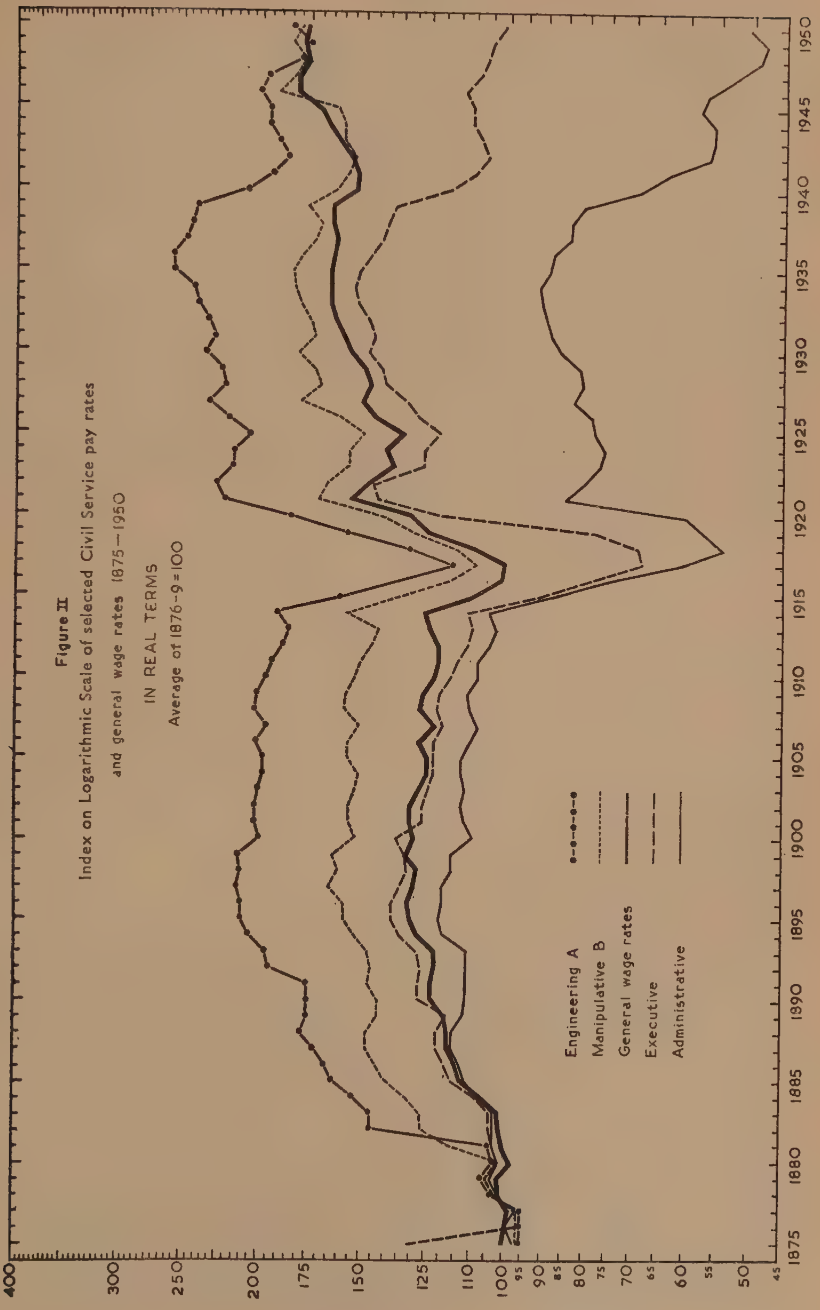

Figure II

Index on Logarithmic Scale of selected Civil Service pay rates and general wage rates 1875—1950

IN REAL TERMS

Average of 1876-9 = 100

APPENDIX B

Sources and Methods of Construction of the Indexes

1. Mid-year pay rates and, for weighting purposes, numbers employed in various grades, have been obtained from the annual Civil Service Estimates, Post Office and Treasury Circulars, committee and commission reports and the evidence tendered to them, and the awards of arbitration tribunals.

2. Once the scales were ascertained, they were averaged over 20 years, unless the scale itself had more than 20 incremental points. The indexes, in other words, measure percentage changes in the tariff in terms of which the State would purchase the labour of 20 Civil Servants, one being at each of the incremental steps of the scale concerned and the balance at the top of the scale. The index would deviate from the reality to the extent that this distribution varied from the actual distribution. The effect of changing the number of years over which the scale is averaged is illustrated in the following:—

EFFECT OF CHANGE FROM £700 × 25—£850 TO £700 × 25—£900

	700 × 25—850 £	700 × 25—900 £	*Index*
10 year average	797.5	810.0	101.6
20 ,, ,, ...	823.7	855.0	103.8
30 ,, ,, ...	832.5	870.0	104.5
40 ,, ,, ...	836.8	877.5	104.9

Variations at the beginning of the scale would, of course, be exaggerated in the opposite direction. In the example given, the difference in result between taking a 20- and a 40-year average is just over 1 per cent., a not unsatisfactory margin for practical purposes.

3. *Permanent Heads of Departments*

This series represents the annual average pay for the Permanent Heads of the Treasury, Board of Trade, the Post Office and the Department of Inland Revenue. Until 1919, three of the four heads were on short incremental scales, of which ten-year averages were taken as being closer to reality than the twenty-year averages generally applied. As mentioned above, the Chorley scale, accepted by the Government in February 1949, was made the basis of the index for 1950, though its full implementation had been postponed.

4. *Administrative Class*

For the period 1875 to 1919 the course of pay has been traced for the higher division clerks in the Secretaries' Offices in the Treasury, Board of Trade, Post office and Inland Revenue. Because of shifting proportions in which various grades were employed and changes in nomenclature, a chain index has been constructed, with a link from 1875 to 1880, followed by ten-year links until 1919, when rates and grades were standardised for the whole Civil Service. From 1919, the three main grades of this class have been combined (Assistant Secretary, Principal and Assistant Principal), in proportion to their numbers in the whole Service in 1929 for the period 1919 to 1946, and for the years 1946 to 1950, when post-war reorganisations had upset previous proportions, in proportion to their relative numbers in 1950.

5. *Executive Class*

From 1876 to 1920, this index represents the movements in the pay of the Lower Division, which was introduced in the former year as a class general to the service. According to the assimilation terms of 1920, this class (then called the Second Division) was supposed to go over to the Executive Class *en masse*, and from 1920 to 1950 the index represents the changes in the average of the Executive Officer scale.

Until the general seven-hour day was introduced in 1890 there were two scales for the Lower Division—one for six-hour and the other for seven-hour offices—which were not in proportion to hours worked. Accordingly, the former was augmented by $\frac{1}{6}$ to make it commensurate with that following the introduction of the general seven-hour day. A further change in 1890 was the abolition of duty pay. According to the Ridley Commission, this had represented an addition of about 8 per cent. on basic pay, and the average of the scale previous to 1890 was accordingly increased by 8 per cent. From 1890 to 1907, when the Second Division was divided into a Lower and a Higher Grade, the scale averages were weighted together in proportion to their numbers in the four departments mentioned above.

For the link with 1875 the scale-averages of 93 clerks were calculated, the clerks being those in the Secretaries' offices of the four departments.

Throughout this section, 30-year averages were taken, instead of the usual 20-year averages, because of the unusual length of the scales involved.

6. *Clerical Officers*

The Clerical Officer Class was a product of the Reorganisation Committee of 1920. There is a certain difficulty in relating it to classes that had previously been in existence, for the new divisions did not accord exactly with those they replaced. Accordingly, two lines have been projected into the past, one leading to the Second and Lower Divisions, the lower portion of whose work went to the Clerical Officers, and the other to the Assistant Clerks or Abstractors, who themselves were successors to the Civil Service Writers. The Writers were paid 10d. per hour or 30s. per week, but the Assistant Clerks and Clerical Officers were on lengthy scales, of which thirty-year averages were made.

7. *Women Clerks*

This is a chain index based on the grades in the Accountant-General's Department of the Post Office, which were converted to general grades in 1920 in accordance with the recommendations of the Reorganisation Committee. From 1921 to 1930, the weights for Higher Executive, Higher Clerical and Junior Clerical Officers were 1: 5: 73, and for 1930–1950, 1: 5: 34.

8. *Manipulative A, B and W*

For the period 1875 to 1912 the most convenient source of information relating to these grades is the volume entitled "Information Supplied by the Post Office" which was presented as evidence to the Holt Committee in 1912. From 1912, rates will be found in the Post Office Circulars and numbers in the Post Office Estimates. London pay and numbers employed have been taken in all cases and scales converted on 20-year averages. Because of variations in the relative numbers in the grades of which the indexes are composed, chain indexes have been constructed with spans of various lengths, but generally in the neighbourhood of ten years.

The composition of the indexes is as follows:—

Manipulative A

Till 1881: Telegraphists. 1881 to 1908: Telegraphists and Counter Clerks and Telegraphists (Counter Clerks and Telegraphists being a single grade). 1908 to 1946: Telegraphists, Counter Clerks and Telegraphists, Night Telephonists (the latter being male exchange operators employed on the night shift in exchanges). 1946–1950: As for the previous period, except that the title of Counter Clerks and Telegraphists became Postal and Telegraph Officers.

Manipulative B

From 1875 to 1946: Postmen and Sorters. 1946 to 1950: Postmen Lower Grade and Postmen Higher Grade (into which grades Postmen and Sorters had been converted).

Manipulative W

Until 1912: Women Telegraphists and Counterwomen and Telegraphists. From 1912, female Telephonists are added. These three grades are then continued to the end of the series, the Counterwomen and Telegraphists changing their title to "Counter Clerks and Telegraphists" and then, in 1946, "Postal and Telegraph Officers".

9. *Engineering A and B*

Sources as in 8 above. The A Index covers all London Post Office Engineering grades, from Inspector to Engineer-in-Chief, combined in accordance with their numbers in 1875, 1880 and every tenth year thereafter. The B Index represents Post Office Engineers below the rank of Inspector. From 1875 to 1920, the London rates for established Linemen and Batterymen are traced through their various changes in nomenclature. In 1920 Unestablished Skilled Workmen and

Labourers were added, having been placed on incremental scales instead of having merely a range of possible rates. In 1946 there was a change of classification, a higher grade of Technician being introduced, which was renamed Technical Officer in 1949, when Skilled Workmen became Technicians I and II.

To adjust for reductions in working hours, the B Index was raised by 50·5/48 in 1914 and 48/44 in 1947. Links and base years for each link were as for Engineering A.

10. *General Wage Rates*

From 1875 to 1919, this is the series given by Phelps Brown and Hopkins in " Wage-Rates in Five Countries," *loc. cit.*, and derived from Wood and Bowley ; Weights: "Apparently, relative numbers employed about 1850 ". For 1911 to 1914, Labour Department Index. For 1919 to 1950, Bowley's index of annual averages from the *London and Cambridge Economic Service Bulletin.*

11. *Cost of Living Index*

From 1875 to 1914, Bowley's index, " weighted average of series for food, rent, clothing, fuel and sundries, with weights as in the Ministry of Labour's Cost of Living Index ". 1915–1939, Ministry of Labour's Cost of Living Index; 1939 to 1950, index of the L.C.E.S., based, until 1947, on estimates from White Papers on National Income and, from June 1947, on the Ministry of Labour's Retail Price Index.

12. *General Price Index*

From the article by Phelps Brown and Hopkins, *loc. cit.*, continued on same formula for 1940 to 1950. " A weighted index of cost of living, wage-rates, and prices of finished export goods, the latter being used as an index of the price of manufactured goods. The weights of 70, 10 20 were assigned as an approximation to the proportionate composition of final buying."

13. *National Income per Occupied Person*

From Phelps Brown and Hopkins, continued to 1950 on the basis of A. R. Prest's series to 1946, spliced to Government estimates in the White Papers on National Income and Expenditure. Sources: Bowley, *Wages and Income in the U.K.*, and A. R. Prest, " National Income of the U.K., 1870 to 1946," *Economic Journal*, Vol. LVIII, No. 229, March 1948.

Johannesburg.

Economic Theory and the Cutlery Trades[1]

By Harry Townsend

In my spare moments I am, I suppose, an empirical researcher, one of those characters who is ejected from his armchair by incompetence with theory to wander round that surprisingly friendly place we call the " real world " asking questions and garnering facts which may serve to confirm, contradict or qualify the theories we hold. You never know, we might come by some new theories in this way; but there is clearly nothing in the activity itself which distinguishes it as a source of original thought. In this paper I would like to give an account of some of my experiences as a perambulatory Paul Pry, and to compare my observations with those of others more prominent in this kind of research. Having the latter objective in mind I shall confine my remarks to questions of industrial organisation, market structures and pricing.

There is one thing I must stress, or confess, from the start. This is the rather haphazard character of my investigations. I cannot claim to have conducted my informants through a carefully constructed questionnaire in undistracting surroundings. On the contrary, I rely upon conversation in homes, hotels, bars, on benches-in-the-park, in committee rooms, workshops and offices. Generally I find my way into the managing director's office; but I have tried all the other places. To date I have carried on ninety-odd interviews—or conversations—with 47 firms, firms with from one to 700 employees. The difference between the number of interviews and the number of firms is accounted for partly by the fact that some firms have been bothered more than once, but mainly by the fact that workpeople, trade unionists, inspectors and other officials also come within my purview. In reporting my findings I would like to emphasise their almost casual, at times accidental, nature.

One result of this method of research—perhaps I should say this gossiping—is that my main sources of information tend to be the more garrulous gentlemen. This does not narrow down the field as much as one might expect; but it presumably introduces some bias into my findings. I am not sure what bias. You are doubtless familiar with Bagehot's dictum that if a businessman " is very busy, it is a sign of something wrong", so, possibly, I learn most from the more efficient managers.

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[1] The substance of this paper was read to the Conference of the Association of University Teachers of Economics, at Sheffield, on January 3rd, 1954: some changes have been made as I have since had the benefit of Professor R. S. Edwards' comments. I should also like to express my gratitude for the kindness and patience shown by the many people connected with the Cutlery Trades—too many to acknowledge individually—who have striven to increase my understanding of their activities.

Where you should look for talkative businessmen depends, of course, on what you wish to find out. I sometimes conceive the areas I investigate as a series of concentric circles: Sheffield, within Sheffield the cutlery trades, and within the cutlery trades a series of sections and cross-sections. For labour and wage problems an area comprising the City of Sheffield and surrounding districts seems adequate; but as I do not propose to consider such questions we can concentrate on my inner circles, beginning with the largest of them which cutlery manufacturers sometimes whimsically, and sometimes proudly, refer to as the " Village " of Sheffield. Here you will find the cutlery trades.

There is a remarkable measure of agreement as to what the cutlery trades comprise. Cutlery manufacturers have a precise definition, and the Central Statistical Office has almost the same one. Reading the Standard Industrial Classification, you will find: " 90GM2—*Cutlery*. Establishments manufacturing table knives, pocket and sheath knives, pruning knives, razors (not electric), razor blades, scissors, manicure sets, etc. Steel table forks are included but silver and silver-plated forks and spoons are classified in Heading 102. Surgical cutlery is classified in Heading 100 ". Local manufacturers would probably cavil at the exclusion of surgical cutlery. They usually distinguish between surgical knives and scissors, which they say are cutlery, and other surgical instruments which they say are not; but the point is a small one. They are in broad agreement with the statisticians. The main feature of the definition which may seem strange is that spoons and forks are not considered to be cutlery. In Sheffield, in contradiction to the evidence of one's senses, they are classed as " flat-ware "; in the Statistical Office they are considered part of the " Jewellery, Plate and Refining of Precious Metals " industry.

When so many good men are in agreement it would be foolish to dissent; but acceptance of this definition does not solve all problems of demarcation. There are the two usual troubles. First, many firms which fall within the cutlery trades also carry on activities that fall without. The manufacture of cutlery is often combined with the making of flat-ware or silverware. One firm which falls within our province as a supplier of celluloid handles and producer of table knives also makes dominoes, dice, hollow-ware, ball pens, insecticide sprays, and its own machinery. Another manufactures scissors, scalpels, electrical components, and tuning forks. Secondly, even when firms are tidy-minded enough to stay within the bounds of our definition they form a far from homogeneous group. Whether you view them from a production or a marketing standpoint, straight-bladed knives, knives with folding blades, scissors and razors constitute at least four separate industries, four industries which have got mixed up with one another. I do not think that this industrial mix-up, or the multiplicity of products, will cause serious difficulty when we come to consider pricing in the cutlery trades. Manufacturing processes are usually carried on independently of one another, often in separate departments, and the products find outlets in different markets. You can take a piece of a firm at a time and analyse its activities as if it were a single product firm. There is a small problem of common costs in the items for management and some other overheads, but it is not usually a serious one. Before we get involved with theory, however, I would like to give a general impression of the industrial organisation.

The intermingling of the four constituent industries is pretty complete. In 1944, in the first three of them (i.e. excluding razors) roughly half the workers were employed in specialised firms, and half in firms which combined the manufacture of two, or all three, classes of product: specialised manufacturers of straight-bladed knives employed just over a third of the workpeople, and those specialising in spring-knives or scissors employed slightly under one-twelfth each. The position has not changed noticeably since then. Today there are probably about 10,000 workpeople in these three trades, of whom about 9,000 are in Sheffield.

Apart from being split horizontally into four sections, the cutlery trades are also divided vertically by processes. If you have ambitions to become a cutlery manufacturer, you can go along to one of the town forgers (or goffers) and purchase a number of blanks, take them to an outworker grinder to be ground, to a cutler to have handles put on, to further outworkers to have your blades buffed and mirror polished, and then to the market to be sold, perhaps, without purchase tax. I must not mislead you: such fly-by-night manufacturers are probably a figment of the imagination. However, many established manufacturers in the town find that there is an advantage in vertical specialisation. There are three main vertical divisions—forging, cover cutting (i.e. cutting celluloid, ivory, pearl, horn or wood covers and handles), and, thirdly, grinding and assembly. There are eight firms in the town which machine-forge knife blades for the trade: they are mainly of moderate size (employing from 40 to 80 workpeople), and they supply about one half of the trade. There are four firms which drop-stamp scissor blanks for the trade. The largest part of the cover cutting section comprises the firms which supply celluloid and other plastic handles, usually cut roughly to shape, but sometimes in their finished form. There are seven such firms. The firms which cut natural materials are almost historical survivals: there is one firm which cuts pearl shell, one which supplies pearl scales for pocket knives, one which cuts ivory, and two which cut stag horn. All the rest of the firms in the town are concerned with the later stages of manufacture. There are about 120 such firms employing 11 or more workpeople, and, perhaps, another 450 smaller concerns. The larger firms straddle the different processes just as they often manufacture several classes of cutlery.

The size distribution of firms has changed very slightly since 1948; but the Census of Production figures, for the country as a whole in that year, give the right impression; 115 firms employed between 11 and 49 workpeople, 31 firms between 50 and 99, 15 between 100 and 199, and 13 employed 200 or over. According to the Census, 27 per cent. of the workers were to be found in firms employing fewer than 50 persons, 43 per cent. in firms employing fewer than 100, and 57 per cent. in firms employing fewer than 200. In all the Census accounted for 14,350 employees. Outside the scope of the Census of Production are about 450 employing entities, with from 1 to 10 employees, providing for another 2,000 people.

We are dealing, you will recognise, with a small-scale industry. The scale is partly explained by the vertical and horizontal divisions I have indicated. Partly, it results from the diversity of products to be found in the different sections of the trades. In the straight-bladed knife section, for example, products vary from 2-foot matchets to 2-inch pins for eating corn-on-the-cob. This diversity puts a premium on flexibility. I came across a colourful example of such flexibility some time ago. At 2 o'clock one afternoon a surgeon rang up a Sheffield manufacturer and asked him if he could produce a new pattern of scissor for an operation which was to take place at 8 o'clock the next morning. There are over 3,000 patterns of surgical scissors already; but I am told that surgeons usually have individual tastes. This scissor was to have one channel for draining blood instead of three. At 4 p.m. a drawing was agreed upon; at 8 p.m. the completed scissor was delivered at the hospital. It had been a rod of stainless steel four hours before. There is only one fact to add: the operation was successful. Specialisation and the need for flexibility explain a good deal of the small scale of operations, the main explanation, however, probably lies with a number of factors which limit the financial requirements of a cutlery manufacturer: the simple nature of most of the machines, the high proportion of labour cost in total cost, and the rapid turnover of capital.

In the past this meant that it was comparatively easy to set up as a cutlery manufacturer. After the Great War, I am told, one could make a start with £5. The estimate is probably optimistic; but if you multiply it by 10 the sum was not excessive. The importance of the rapid turnover of capital can be seen in the early nickname of a gentleman who built up one of the largest firms in the inter-war years. He was known as the " Running Gross ". He began by buying a gross of blanks, grinding them, taking them to be hafted, buffed and polished, selling them, and buying another gross of blanks. In his early days he would be turning over his capital at least 52 times a year. It is still comparatively simple to start a cutlery firm; but, nowadays, it is more difficult to avoid the sad succession of premature growth, overtrading and receivership. The slow pace of growth which is all that is possible on the basis of a firm's internal resources, with the present burden of taxation, is likely to be a constant irritation to the adventurous, and may make the gain seem not worth the sacrifice whenever several years' savings are required to leap over some minor obstacle in the path of expansion. In these circumstances the temptation to over-reach your financial resources is very great, and can only be eluded by a rare combination of financial skill and luck. The temptation proved too great for three young firms with whose history I am acquainted.

I hope I have said sufficient, and not too much, about the organisation of the industry. This is the appropriate area for studying the production, efficiency and research problems of the trades; but for our purposes it is mainly a background. The small scale of the industry has two consequences for my further remarks. First, the cutlery trades are by no means typical of British industry, although they probably have points in common with about nine-tenths of industrial firms producing about one-quarter of manufacturing output. We must beware of generalising any conclusions too far. Secondly, there is usually not much difficulty in identifying the entrepreneur in a cutlery firm, whether you define him as risk-taker, co-ordinator, or decision-maker: he is quite often the same man who owns and manages his own works.

You would not expect such people to have elaborate systems for costing: they often call the general office the " Counting House ". In point of fact, methods vary from the firm which takes its labour costs and adds 200 per cent. to the firm which employs a full-time cost accountant complete with a splendid filing system; but it would be misleading to suggest that a casual attitude is commonly adopted towards costs. Some firms use progress cards which accompany each batch of goods as it moves through the works and record all items of direct costs. Almost all of them have record books or cards detailing the direct costs—materials and labour—of the various patterns of cutlery they produce. The overhead costs do not constitute much of a problem because they should not vary much between different patterns of knives or scissors which all go through the same processes. An average figure spread over the output as a percentage addition to labour costs, or direct costs, is probably not inaccurate. Occasionally one finds that overheads are calculated on a departmental basis. At least one manufacturer has solved his costing problems simply and completely. His firm has one of the most modern factories in the industry which is sub-let to the workpeople; overheads are covered by the rents received, and a price is negotiated for each process with the teamster renting the individual workshops.

The breakdown of costs varies somewhat from firm to firm; but in firms employing from 50 to 200 workers one generally finds that the costs of the most popular pattern of table knife—the Egg-Waterloo as it is called—are made up of 50–60 per cent. direct labour, 20 per cent. materials, and 20–30 per cent. overheads. As the quality of the article rises the labour cost becomes a larger proportion of the total: for the highest quality wares it may occasionally account for over 70 per cent. The costs do not seem to vary much with scale. There may be a certain gain as workers settle to the repetitive rhythm of a long run; but there are few indivisibilities except in the safety razor section. Average variable costs, and average total costs of single patterns, are, therefore, usually fairly constant, their level varying with the efficiency of the firms.

We are not without precedent if we move from costs to prices, and I want now to talk about price determination, first as it appears to me, and then as it appears to cutlery manufacturers. I do not think we ever differ to a greater extent than explanation differs from description, or reasoning differs from rationalisation, and often we are largely in agreement. You might think that annual sales of about £15 million, the output of 13 or 14 thousand people, do not call for much analysis. Closer acquaintance with the trades soon disillusions you.

I was taught to analyse market structures in terms of the elasticity of demand, cross-elasticity of demand, conjectural price flexibility, and some measure of freedom of entry. In such terms, a monopolist is defined as facing a demand curve with an elasticity less than infinity, a cross-elasticity of zero, a conjectural price flexibility of zero, and complete protection from the entry of new firms into his market. We were told that a cross-elasticity of zero is impossible as every good competes for people's incomes, so that the pure monopolist is a purely logical concept. This is doubtless true; but the cutlery trades contain within their midst, although outside their definitional limits, what must be one of the closest, if not the closest, of approximations to the pure type. This is the firm I mentioned which manufactures tuning forks. If you think about the matter you will see that the only close substitute for a tuning fork is another tuning fork, and there is only one tuning fork manufacturer in the country.[1] There are five other manufacturers in the world; but they are excluded from this country by a tariff. Anyone with a drop-stamp could manufacture the two simplest forks; but for piano tuning you need a set of 13, and for industrial and medical purposes you may require forks which vibrate from 24 to 6,000 times a minute. For these specialised tuning forks you require a set of standards and a skilled tuner who works by ear, or an electronic counter, which is too expensive for the size of the market. Sheffield's firm possesses the only Englishmen who can tune tuning forks by ear, and an electronic counter was installed with the assistance of the government during the late war, so its position seems fairly secure. I am afraid that my monopolist is a far from sinister character. He employs only 17 people on his tuning forks, and insists that he fixes his prices by taking average total cost and adding a percentage for profits, the margin being limited because " We don't want to sting people ", and, perhaps, also because " the tariff is only just sufficient to keep the Germans out ".[2]

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[1] Pitch pipes have not got the range, durability, mechanical or medical properties of tuning forks.

[2] I am indebted to Mr. W. Ragg, of Ragg Tuning Forks, Ltd., for information about tuning forks.

Turning to the cutlery trades proper, you will find no pure monopolists but a good deal of behaviour which only makes sense in terms of various kinds of imperfect competition. Let us look first at the markets within the trades, the markets between the three vertical divisions.

In the cover-cutting section of the trades there are single firms which supply ivory and pearl blanks for handles, but their monopoly position is qualified by the competition from the closely substitutable products of the plastic cutters. In fact it is the competition from the latter manufacturers which accounts for there being only two survivors supplying these natural materials. The market set-up in the celluloid section has been curious in the war and early post-war years. There are seven firms involved; but one of these is the sole British source of the raw material. As you might expect, a price agreement was made at the outbreak of the war when imports of celluloid ceased. This lasted until the spring of last year when one of the firms broke away under the influence of slack trade and the availability of Italian celluloid. There is not a great deal of love lost between the independent cutters and the firm which supplies British celluloid: reliance on a competitor for raw material is bound to give rise to suspicions from time to time. However, with the revival of trade, the prices have returned to the last agreed level. Under the agreement prices were based on the costs of the material supplier with a percentage addition for profits. The addition was one which was said to be " reasonable ", but the decisive con-considerations were probably the potential competition from German blanks, the actual competition of solid and hollow metal handles, and the state of trade.

There was also a price agreement among the knife blade forgers which broke down at a slightly earlier date than that of the celluloid cutters, and is still inoperative. The town forgers have to take account of the fact that their customers compete with integrated firms in the sale of their finished products; but as the blade-blank is only a small part of the total cost of a knife this is not a serious restriction. Their most recent agreement was reached in 1946 at a time when steel supplies were limited. Prices based upon costs, therefore, appeared more and more attractive as steel supplies improved—a fact which did not delay upward adjustments whenever justification appeared in the form of increased wages or other costs.[1] To explain the prices charged in terms of full-cost principles would be merely to skim the surface of the actual situation: the base costs were at a transient high level and it was the demand conditions which made the prices possible. This became evident some time before the agreement broke down. For two years, before anyone cut his prices, they were held steady although some costs continued to rise. The break came with the Australian import restrictions, which heralded a recession in the cutlery trades from which they have recently made a seasonal, or more permanent, recovery. Price agreements do not preclude other forms of competition, of course. There is competition in quality: firms are noted for their standardised blanks, the consistent hardness of their products, or for special patterns such as butchers' and trade knife blanks. Personal feelings and contacts also seem important: at least one firm has been mailing blotters carrying its name to each knife manufacturer every week for over 20 years.

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[1] To prevent any misunderstanding, perhaps, I should add that I consider the price increases ought to have been made at these times.

Among the four firms which drop-stamp scissor blanks there appears to have been no price agreement. They know each other, of course, and tended to make concurrent adjustments to their prices as the cost of steel or wage rates moved upwards. Since mid–1951 prices have remained stable. Competition has mainly been in terms of service (the size of stocks carried) and quality, and there is a certain amount of division of the market by patterns of scissors. The onset of recession, in the spring of 1952, was met by transferring capacity to the production of other forgings such as spanners and cycle crankshafts.

The cover-cutting and forging sections of the cutlery trades are comparatively small ones. The bulk of the firms are to be found straddling all three sections or in the grinding and assembly section. Here markets are broken up along the horizontal divisions, and, within the divisions, the market situation varies a good deal, chiefly with the quality of the products. You need little imagination to recognise that straight-bladed knives, spring knives, scissors and razors are sold in different markets; but the lines of division go much deeper than this. In the straight-bladed knife class, for example, it is necessary to distinguish between trade knives (which have many sub-divisions such as plantation knives, butchers' knives, pallette knives, knives-for-cutting-moulding-marks-off-rubber-tyres, and so on), kitchen knives and table knives.

Looking more closely at the largest of these groups, table knives, there are three main markets separated by quality distinctions. In the lowest price-range there are about six large firms involved and a fringe of outworkers and " little masters ". This quality of knife sells on one characteristic, its price. The manufacturers prefer to base their prices on costs plus a conventional profit mainly, I think, because this is the best indication of their rivals' costs and, consequently, of the individual demand conditions they face. Such pricing behaviour is not a permanent phenomenon, however. One manufacturer who has an exceptionally mechanised plant echoed our textbooks by pointing out that it is better to get some contribution to overheads than nothing, and another grinned and said: " I won't say it wouldn't be worth your while trying me with an offer—I might rise to it ". In the medium quality range, conditions approach workable if not perfect competition. About 50 medium or large firms are concerned, and there is a large fringe of very small firms. For ordinary patterns of knife there is a recognised price, and you find that firms will tell you that they sell for what they can get and concentrate on keeping their costs down. There are some attempts to differentiate products by decorating the back edges of blades, registering patterns of handles, offering different-shaped blades and so on. Occasionally this goes to remarkable lengths: one firm, for example, offers 89 different patterns of steak knives and hopes soon to bring its total to 100. Many firms have their " bread-and-butter " lines in the medium quality range, and one or two specialities which they hope to do rather better with. The high-quality market in this country is dominated by two firms which sell through their own shops or showrooms; other firms market high-quality lines through specialised shops and jewellers up and down the country. This is the luxury market where price is subordinated to quality, and competition is more a question of establishing a reputation, trade marks and service. At home this market has been sadly mauled by the purchase tax which has emphasised the restrictions placed on pricing decisions by the state of demand. The inexperience of purchasers of cutlery increases the imperfection of competition in this market by strengthening the ties of firms with particular sales outlets.

Mrs. Robinson, on her recent revisit to Imperfect Competition,[1] draws attention to the fact that firms are generally multi-product ones with bread-and-butter lines and specialities, and suggests that an extended theory of price discrimination has a wide application here. Personally, I doubt whether such a refinement of the analysis is often necessary. In areas where the different markets overlap there is doubtless some price discrimination; but I do not think that dealing with articles within broad classes of quality as single commodities sold in separate markets by fragmentary single-product firms is seriously misleading. Account has to be taken of the fact that demand conditions in these separate markets are not independent of one another; but in this connection account has to be taken of markets for quite dissimilar products.

A striking example of the competition of substitutable goods of different kinds is to be found in the pocket knife section of the trades. In the manufacture of low-priced pocket knives one firm stands supreme; no other firm can approach its prices. The firm presents one of the few examples of the economies of scale in the trades: it has by far the most modern plant in the town even though some of its methods bear a close resemblance to Adam Smith's description of pin making. In a numerical sense the firm is a technical monopoly. It is in no position to exploit its customers, however. This is because of the elasticity of demand for its products—an elasticity which is partly explained by the fact that the firm is forced to aim at the mass market of the lower income groups, including the lowest income group of all, the children, but mainly by the competition of close yet dissimilar substitutes. Its products are to be found alongside toy stalls in universal stores, or competing with scarves, handkerchiefs, pencils, purses, combs, models of Blackpool Tower and so on, among sea-side novelties. Knowing that the firm is independent of other pocket knife manufacturers in its pricing decisions, I was particularly interested to find out how the management viewed such matters. The firm sometimes introduces new patterns so I asked how they decided what price to ask for one of these. The answer was that they knew from experience what price they could get for a sufficiently large sale, and it was mainly a question of calculating whether costs could be kept low enough to justify production.

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[1] Joan Robinson, " Imperfect Competition Revisited," *Economic Journal*, 1953, p. 581. Reference is made to Eli W. Clemens, " Price Discrimination and the Multiple-Product Firm ", *Review of Economic Studies*, Vol. XIX (1), 48, 1951–52.

I do not want to go into the domestic market structure in too much detail, and I do not intend to deal with foreign markets at all. Before we leave my views of price determination in the cutlery trades, however, I would like to point out two further situations, one of them unfavourable and one of them apparently favourable to full-cost theorists.

The unfavourable situation is to be found among the medium quality scissors. Since the war an interesting development in the scissors trade has been the introduction of the kitchen scissor, the latest " gimmick ", as the Americans would say. Here was a simple, but useful, innovation which made its debut at quite a high price. Now there are six or seven firms in the field and prices are lower. This is not an unusual price history for a new commodity; but it is difficult to see how it is to be explained in terms of full costs and conventional margins. In the cutlery trades the steak knife provides another example.

Full-cost theorists would probably feel more at home among the specialities. Take scissors for docking dogs' tails, or knives for removing moulding marks from rubber tyres. So far as I know there are only single firms which produce these goods, and they both insist that they fix their prices by taking their full costs and adding a percentage for profits. Incidentally, they are both prepared to acknowledge, regretfully, that they cannot always proceed on these principles for their main products; but the specialities are always cost-plus. The full-cost theorist might rest content. Personally, I should prefer to explain matters in terms of being satisfied with a normal, or slightly above normal, profit in the face of potential competition. There are only single firms actually manufacturing these specialities; but there are no mysteries involved in their methods of production.

I hope I have said sufficient to illustrate the applicability of our theoretical categories to the market behaviour of cutlery firms, and the necessity to consider demand conditions and cost conditions outside as well as inside of the individual firms in order to understand their pricing decisions. Lurking within my discussion there have been several assumptions and conceptions which we often use in theoretical reasoning and which I feel I ought to bring out into the open.

First, do cutlery firms attempt to maximise their profits? If I had to answer yes or no, my answer would be yes; but a more precise answer would be yes, within limits. I do not see how one can explain the industrial organisation, the development of products such as the kitchen scissor or steak knife, the formation and dissolution of price rings, the competitive tendering for government contracts, the attention paid to costs, the emergence of market prices for bread-and-butter lines, the need for a Wages Council, the tendency of growing firms to overtrade, except on the assumption that firms are trying to make their profits as large as they can. Take the caricature drawn by one manufacturer to explain why he seldom attends meetings of the Manufacturers' Association although he pays his subscription regularly—" I don't go because the fellows there are too insincere. A manufacturer gets up and makes a speech condemning the prices we are getting. We all ought to agree to charge, say, 19s. a dozen. There are cries of hear ! hear ! all round. The speaker finishes, walks into the next room and takes up the telephone—Get out a new price list: we are charging 18s. 6d." The picture is doubtless exaggerated, but it fits within a framework of maximising behaviour.[1] Whether my informant is maximising his profits by contributing to an association he does not actively support is a more difficult question: trade associations have many useful purposes to serve in these political times.

As a first and close approximation it seems true to say that cutlery manufacturers do attempt to maximise their profits; but there are limits to such behaviour. For example, one manufacturer is a keen golfer, another is interested in local politics, a third in public work, a fourth in the opposite sex, a fifth in a quiet life. I should not be surprised to find any of these gentlemen passing up profitable opportunities in order to pursue their other interests. This does not seem to be an important limitation of the assumption of profit maximisation, however. If you were to face any of these entrepreneurs with alternative policies within the present scope of their businesses, one of which offered a profit of x and the other a profit of x-plus, I do not think you need have much doubt which they would choose.

There was one occasion when I came across the pure type of profit maximiser. It was one of my earliest interviews. I was talking to a manufacturer about the new methods which he had introduced into his works, when he suddenly went off at a tangent. " I'm always thinking ", he said, " of a line marked £400 per week. If I raise my sales above this line I begin to make a profit; but if I increase my sales I increase my costs and so it doesn't work out like that at all ". I thought " I've found him—the Entrepreneur ". Two months later a receiver-manager was appointed.

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[1] The multiplicity of products and the structure of the trades clearly prevent effective price agreements at most points. The constitution of the Manufacturers' Association precludes such agreements within the framework of the Association.

As a matter of fact I still regard this gentleman as one of the more enterprising of my acquaintances. The fate of his firm, it seems to me, illustrates one of the critical inadequacies of our present theory of the firm. This is the virtual absence of any reference to the finances of the firms we analyse. A firm could be run according to the criteria of the text-books and get into difficulty in no time. All that is required is that the debtors be slow to pay and the creditors be pressing. In the case of small and growing firms the behaviour of the finances is at least as important as the behaviour of costs and revenues. Small cutlery firms are forced out of business usually not because their costs are too high, their prices too low, or their sales too small, but because their finances are mismanaged. My entrepreneur began his firm after the war with £200: when the receiver was appointed his turnover was £30,000 per year. It was the bank which foreclosed, and so he has an understandable grudge against bankers. He was particularly incensed by his bank manager's questions. "When do your debtors pay?" Answer: "From one week to seven months". "On what day of the month do you pay your bills?" Answer: "On no particular day, but when I have the money". You see which way the crash came. This firm's production methods were first-rate, its sales efforts energetic and imaginative, its financial management non-existent. You may subsume financial efficiency under the maximisation of profits if you wish. Personally I think we should; but if you do so, then you cannot proceed to theorise merely in terms of costs and revenues. From this point of view I feel a good deal of sympathy towards Professor Boulding's reconstructions.[1]

There was a third conception lurking amidst my earlier remarks which, perhaps, needs clarifying: the distinction between the short period and long period. When I spoke of the dissolution of price rings I was evidently dealing with short-period situations. When I mentioned demand conditions a long-period conception was often implicit in my remarks. The distinction between the short and long period is, it seems, an essential one; but it should be recognised that the concepts may be used in two separate senses which are appropriate for different purposes.[2] In viewing a market situation as a whole, it is often helpful to consider what are the likely developments whilst firms are of their existing size and number, and then to proceed to examine the possibilities of firms expanding or contracting, entering or leaving the market. When the short and long periods are used in this way consideration is given to possible occurrences over periods of time. Similarly, there is often an advantage in distinguishing between decisions which firms reach without considering the possibilities of changing their plant, establishing lasting sales contacts, or meeting potential competition, and the decisions they make when they take these variables into account. On this interpretation the short and long period refer to the different data on which decisions are made at single points of time and not to changes occurring in a firm over periods of time. It is very difficult to say what will happen in a firm over a period of time. In small firms, at least, conditions change, the manager develops new interests, he grows older even if he does not die. Furthermore, it is quite possible for an entrepreneur to be comparing what would usually be called short-period cost conditions and long-period demand conditions in reaching a single decision. For example, it may be that his views on a price which " looks right " are coloured by estimates of the likely prices of potential competitors, whilst his cost estimates reflect mainly the alternative uses of his existing plant in the immediate future. It is also possible that an entrepreneur is making short-period and long-period decisions at the same time; for instance, he may be deciding to take on a non-recurrent order for a gift scheme at a low price in order to tide over a slack period, and also be considering investment plans. Of course, if the businessman were a superman he would take into account the same comprehensive set of variables for all decisions, and it may be that some process of reconciliation goes on in the inner recesses of his mind; but his acts seem to be consciously based on data which vary from problem to problem, and they are most readily understood on such a basis.

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[1] K. E. Boulding, *A Reconstruction of Economics* (New York, 1950), Ch. 6. Boulding's expression of equilibrium in terms of preferred asset-ratios has the attraction of bringing the liquidity position of the firm into account explicitly as a variable deserving continuous attention. An additional advantage may be that his approach is similar to that sometimes adopted by specialists in managerial methods to establish standards of good management.

[2] Marshall uses the concepts in both senses in Ch. V, Bk. V, of his *Principles*: compare the rest of the chapter with the illustration from the cloth trade (p. 364, 8th edition).

As to the comparative importance of long-run and short-run cost and demand conditions, I am not at all confident. Where market prices become established it seems that short-run cost and demand conditions are the main determinants. When the manufacturer has more discretion as to the price he shall charge, a combination of long-period demand conditions with short-period costs often seems the appropriate explanation: his price seems to take into account the likelihood of competitors invading his market if he charges too much, or the desirability of forming lasting sales contacts, and his cost calculations seem to have only the tenuous connection with the more distant future which comes from the decision that this line of production will contribute more to his net receipts than any alternative available. The long period does not come completely into its own until one moves from price to investment decisions, and by then it frequently seems a synonym for the inscrutable. I do not propose to make the move from price determination to investment theory, and I hope that this will be accepted as sufficient excuse for my not dealing with the influence of uncertainty. Uncertainty seems to be a direct force tending to keep prices low in order to avoid potential competition or to establish sales outlets, and an indirect force operating on prices in the opposite direction through its influence on the choice of production methods, products, markets and financial provisions.

So much for pricing in the cutlery trades as it appears to me, and for observations on orthodox theory which my enquiries have suggested. How do cutlery manufacturers themselves regard their pricing decisions? I have anticipated the answer to this question to some extent by using one or two quotations to bolster my case; but in this way you may feel that you have received a biased sample. The usual way in which I try to find out how manufacturers themselves view their pricing decisions is to explain my supposed dissatisfaction with the logic chopping of price theory, and to suggest that this needs checking against, and could probably be improved by, the experience of the men on the job. I have never known this suggestion to be opposed, and we generally consider the matter without further prompting from me. We usually take a standard product to start with, and I try to leave the man to his own devices. Having got his side of the story, I begin to ask the usual questions about why he does not charge a little less, or a little more, how responsive he thinks sales are to price changes, how his costs behave, whether he has to bear a limited number of competitors in mind, and so on. Before we begin to look at the answers there is one consideration which I must point out to you. Most of my interviews have taken place since March 1952, and from that time until very recently trade has been somewhat slack and competition more intense. This probably caused manufacturers to examine their pricing policies more closely than they did in the earlier very active years.

Of my 47 firms, one, the one-man firm, has to be eliminated. He is a hand forger, and his prices would be explained along with wages in the trades. In three other cases we never got round to pricing; this leaves 43 firms. These 43 firms represent a fairly complete coverage of the largest firms, a sixth of those employing between 25 and 100, and a half-dozen firms employing from six to 25.

Three of the managers explained that they fixed their prices according to full unit costs plus a " fair " profit margin, and were not to be shifted from the opinion either that this was the proper thing to do or that they ever did differently. The views of one of these gentlemen might be explained by non-economic considerations; but apart from such considerations, his firm has a respected trade mark and puts that mark on a good deal of high quality cutlery. The second manufacturer has been the happy owner of a patent for a special feature. I asked him if he had found the patent of much advantage. A reminiscent glow suffused his face. " It's been splendid, just splendid," he said. " It frees you from those fellows who go round asking what your customers are paying and offering 6d. less." The third entrepreneur is much more interested in the technical than in the sales side of his firm. He has developed an advanced product of which he is the sole manufacturer.

Following these three full-cost pricers I have found 17 other firms with closely allied opinions. The managing directors of these 17 explained their pricing policies first of all in terms of full-cost principles; but later conceded that in times of bad trade prices could not be calculated in this way. The profit margin was generally a conventional figure—7½ per cent. is popular as a " fair ", or sometimes " inadequate ", margin, an opinion which may have its origin in wartime, cost-plus contracts—but sometimes the margins varied with the class of product. The pleasantest answer I received from this group of firms was from one director who said: " How do we fix our prices? You know what a price is, don't you? 19s. 11d. is a price. At least it is for a hardware dealer: it would be 21s. in a jeweller's ". For this piece of cynicism he should, perhaps, be placed in the third group of firms; but he, himself, would explain prices normally on full-cost principles.

In the remaining 23 firms such principles found little support. The majority of these manufacturers claimed that there was little they could do about the prices they charged. Most of them considered that there was an established market price for their products, and if you could not recognise it " you bought the experience quite rapidly ". Two or three firms put their policy in the form that they got all that they could. One of the curious things that I have found is that it is in the firms which make the most careful estimates of their costs that prices are seen to be fixed on some other bases. Two such firms explained that when they introduce a new pattern they begin from an estimate of the selling price and then discuss ways and means of getting their costs as low as possible. Another firm which batch-costs all its products as they proceed through the works, told me that the relationship between their prices and costs varied from product to product: on some of them they made a loss; but they knew just which these were and accepted the fact deliberately as an element of sales policy. (Incidentally, I learned of this policy when trade was booming—you might explain it by a " below-cost " theory of pricing!)

No great importance can be attached to the 23 votes against full-cost pricing, or the 20 votes in favour. As I continue my interviews, and conditions change, I expect the voting will change; but it is unlikely to alter my own reading of events. There is no consistent distribution of the votes by size of firm: the smaller firms are perhaps more outspoken about the prices they are out to get, but some of them are quite righteous in their views, and many large firms pointed to the market as the determining factor. There is a greater proportion of firms manufacturing specialities, or quality lines, among those holding opinions that full-cost is the normal basis of pricing; but here again one finds firms which regard their prices as determined independently of their costs or which wish to get as much as they can.

I am afraid you may feel that I have taken your time for an excursion into the obvious and, indeed, I am no exponent of Orwellian " newthink ". As it has been an excursion, however, I should like to conclude by drawing your attention again to some of the familiar landmarks we have passed. First, there is the need for economic theory to provide a system of interlocking explanations. There are markets before the trades, between the trades, and beyond the trades, and we need to see the way they intermesh if we are to understand the economy we live in. This is where full-cost theory seems most inadequate: it describes decision making in terms which are incapable of extension to provide a systematic explanation of the economy as a whole. It has other defects, of course—it fails to explain the determination of profit margins or the output of firms, it predicts behaviour which does not occur and fails to explain behaviour that does—but all these defects stem ultimately from its patently *ad hoc* nature. Secondly, there is the fact that our single-product analysis is a more powerful tool than is sometimes supposed. In theory, quality differences could blur the distinction between commodities beyond all recognition: in practice, life is not so difficult. The problem of the multi-product firm seems to me to lie with the analysis of common costs, and this may frequently not be a large enough problem seriously to qualify simple theory. Thirdly, the most sensitive nerve in a cutlery manufacturer's body is to be found beneath his money-pocket, and you will not go far wrong if you ignore the rest of his nervous system. Fourthly, the maximisation of profits implies the realisation of profits, and we ought to take financial considerations more fully into account in our theory of the firm. Fifthly, may I remind you that decisions are made at points of time, and, in this connection, long- and short-period considerations have to refer to such points of time. Finally, I would emphasise once more that the field we have been surveying is a small and, in some respects, a peculiar one. Our accepted theories have much stronger claims to recognition than the fact that they fit the Cutlery Trades. Nevertheless, for what the fact is worth, they do.

University of Sheffield.

Comment on Mr. Lancaster's "Refutation"[1]

By HARRO BERNARDELLI

Mr. Lancaster surreptitiously exchanges one assertion for another and then denounces the suppositious proposition as illegitimate. I quote: "Bernardelli goes on to show that all the ordinary utility properties, *expressed in first and second order derivatives of U in classical theory*, can be represented by first order derivatives of f"—when f is defined as

$$(1) \qquad f\,[(\alpha, \beta);\ (x, y)] = U\,(\alpha + x, \beta + y) - U\,(\alpha, \beta).$$

Delete in this quotation the words set out in italics, then you have the proposition which I have in fact asserted and which I confidently assert again, namely

Proposition I: The classical theorems of the marginal utility theory can be expressed in terms of first order derivatives of a properly chosen index function f defined by (1) above; and this is true irrespective of whether the auxiliary function U which appears in this index happens to be a quadratic function or not.

The insertion of the italicised words, however, changes the meaning of my proposition I into a thesis that would seem to imply the quite different

Proposition II: Second order derivatives of U can always be equated to first order derivatives of f.

This would be patently absurd as a general theorem; it holds only when U happens to be a quadratic function.

> (I explicitly mentioned this in the example which is the main target of Mr. Lancaster's attack (Equations 6 of my "Rehabilitation"[2]). And being aware that casual readers might get Mr. Lancaster's mistaken idea that I am trying to pass off proposition II as a *general* truth, I specially issued a warning that "I am not trying here to put across an outrageous bit of mathematical trickery". The clue to this puzzle, I said, consists in a clear distinction between the functions f and U, a distinction which I then elaborated at length.)

Mr. Lancaster is thus scarcely entitled to such legerdemain. My "Rehabilitation" was written for no other purpose than that of demonstrating (*a*) that the function U by itself *is not* a properly chosen ordinal index of utility as it fails to order simultaneously *both* total and marginal utility valuations, (*b*) that the classical Marginalists argued *in effect* in terms of the function f which—on account of distinguishing between the quantities (x, y) that are the object of valuation and the position

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[1] Cf. *Economica*, August 1953.

[2] Cf. *Economica*, August 1952.

(α, β) from which the valuation is made—does not have the same disability as U, because (*c*) marginal and total utility do not differ from one another in the sense that the one is the *derivative* of the other. If at the margin of a decision a " small additional dose " $\triangle x$ is being valued, then according to the classical theory

$$(2) \qquad f\,[(\alpha, \beta);\ (\triangle x, 0)] = U(\alpha + \triangle x, \beta) - U(\alpha, \beta)$$

is the marginal utility of that dose. Here the expression (2) has exactly the same form as (1): both are differences in levels of U. The distinction lies merely in the size of the quantities that are being valued: (x, y) and $(\triangle x, 0)$, respectively. By expanding, and neglecting terms vanishing of higher order, (2) may formally be written as $\frac{\partial U}{\partial \alpha} \triangle x$, but this manipulation does not alter the situation. The condition $\frac{\partial U}{\partial \alpha} > 0$ is merely a *criterion* for marginal utility to be positive.[1]

Mr. Lancaster's italicised words are therefore not a precise and unambiguous appraisal of the classical position. By confusing the functions f and U, and by naïvely accepting the latter as a proper index of utility, Mr. Lancaster mistakes the first order derivatives of U to be the marginal utilities themselves. In doing so he becomes the victim of Jevons' speculative Calculus of Pleasure and Pain, although Jevons did at least distinguish between marginal and the " degree " of marginal utility, i.e. between $\frac{\partial U}{\partial \alpha} \triangle x$ and $\frac{\partial U}{\partial \alpha}$. Mr. Lancaster, however, cheerfully claims that marginal utility is independent of the marginal increment !—when one writes about the Marginalists one should know what they have asserted.[2]

In any case, I have shown in my " Rehabilitation " that there is absolutely no need to express the ordinary utility properties in terms of derivatives of the auxiliary function U. Mr. Lancaster asserts the opposite without rhyme and reason, simply *assuming* the very thing which I dispute. His " Refutation " is, therefore, a straightforward *Petitio Principii*.

This " Refutation " echoes an earlier attack on my thesis which came from the distinguished pen of Professor Samuelson.[3] He also did not recognise that the auxiliary function U simply cannot be accepted by the marginal utility theory as a proper index of value and that, both for mathematical and historical reasons, it is wrong to refer to the function U as " the ordinal index of utility ". Arguing that the function f would be merely a complicated substitute of " *the traditional ordinal*

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[1] Similarly $\frac{\partial^2 U}{\partial \alpha^2} < 0$ is the criterion for decreasing marginal utility. The explicit condition is $\frac{\partial}{\partial \alpha}\left[U(\alpha + \Delta x, \beta) - U(\alpha, \beta)\right] = \frac{\partial}{\partial \alpha}\left[\frac{\partial U}{\partial \alpha}\Delta x\right] = \frac{\partial^2 U}{\partial \alpha^2}\Delta x < 0$, because it is understood that the marginal increment Δx is positive.

[2] It should be noted that Mr. Lancaster is the victim, not the originator, of this widespread confusion. Cf. H. T. Davis : *The Theory of Econometrics*, pp. 65f.

[3] Cf. *Economica*, February 1939.

index U", Professor Samuelson established with impeccable logic the general theorem that in regard to monotonic transformations of U, no index derived from U could possibly fare any better than *an ordinal index U* itself. This is undoubtedly true; but why should anybody bother about transforming U, when *U is not* an ordinal index but merely an auxiliary function? We are surely concerned only with the behaviour of genuine ordinal indices. Thus I challenge not the content, but the relevance of Professor Samuelson's deduction : the *unwarranted speculative assumption* that the function *U is* the proper value index of the marginal utility theory. This illicit assumption *alone* is responsible for the dilemma: either to abandon the marginal utility theory, or to postulate measurability of utility.

When somebody asserts that the moon will not rot, because *it is not* made of green cheese, then it is of no use to counter the assertion by reiterating the sublime truth that the moon would rot, *if it were* made of green cheese. Both my critics will have to show that their common assumption "*U is* an ordinal index of utility—*is not* what I have proved it to be: a speculative falsehood which Economics has inherited from the Utilitarian Calculus.

University of Otago.

Rejoinder to Mr. Bernardelli

By KELVIN LANCASTER

In my original criticism[1] of Dr. Bernardelli's most recent paper,[2] I concentrated on a set of misleading equations which it contained, and did not then concern myself with other aspects of the paper.

Dr. Bernardelli is insistent that the ordinary utility function U is, in some way, an "improper index", and that his function $f[(\alpha, \beta):(x, y)]$, which is the difference in U at two points, possesses some inherent superiority over U and its derivatives.

Now it is true that the classical utility theorems can be expressed in terms of the change in utility from an initial position, and the utility of the initial position itself is irrelevant. Bernardelli's difference function and the usual derivatives[3] of U both eliminate the arbitrary zero.

[1] Kelvin Lancaster, "A Refutation of Mr. Bernardelli", *Economica*, August 1953.

[2] H. Bernardelli, "A Rehabilitation of the Classical Theory of Marginal Utility", *Economica*, August 1952.

[3] $\frac{\partial U}{\partial x}$ is, of course, the rate of increase of utility per unit of commodity. This rate—the marginal utility of one unit—is frequently spoken of as *the* marginal utility at the point. If one is ordering marginal utilities, one has to ensure that the same unit of increment is used each time, and the derivative ensures this. This does not mean that marginal utility is thought to be independent of the marginal increment—quite the contrary !

In his "Comment", Dr. Bernardelli states his objection to U as an index as that "it fails to order simultaneously *both* total and marginal utility valuations". He quotes, as an advantage of his own index f, that "marginal and total utility do not differ in the sense that the one is the *derivative* of the other".

It is difficult to understand what Dr. Bernardelli means by the latter phrase; the derivative of a function does not differ from it, the derivative is inherent in it. If a function is defined, its derivatives, if they exist, are defined also, and, therefore the function U does, in fact, order total and marginal utility simultaneously.

The Hicks-Allen approach to utility has rejected the assumption that *marginal* utilities can be ordered, an assumption that Dr. Bernardelli accepts. It is easy to show that, if utilities are ordinal but not cardinal, the ordering of the marginal utilities is unknown. It can also be shown that, conversely, if the ordering of marginal utilities is assumed, this is equivalent to the assumption that a cardinal measure of total utility exists, with the zero point arbitrary.

I cannot see why, if Dr. Bernardelli accepts the ordering of marginal utilities, he is so dissatisfied with U and its derivatives, which seem perfectly adequate to the task provided that the arbitrariness of any assumed zero point is realised.

His own function $f[(\alpha, \beta):(x, y)]$ has two types of first derivative, those with respect to x and y, which equal the ordinary first derivatives of U, and those with respect to α and β, which equal the differences of the first derivatives of U at two points. The sign of $\frac{\partial f}{\partial x}$ is determined by the sign and value of $\frac{\partial U}{\partial x}$, and the sign of $\frac{\partial f}{\partial \alpha}$ is determined by the sign of $\frac{\partial^2 U}{\partial x^2}\left(\text{or } \frac{\partial^2 U}{\partial x \partial y}\right)$.

The position is quite straightforward; the values and signs of f and its first derivatives depend on the values and signs of U and its first *two* derivatives. If U is an "improper" index of utility, then so is f.

The dispute between Hicks-Allen utility and classical marginal utility turns about the assumption of the orderability of marginal utility. If this assumption be accepted, the function U and its derivatives would seem quite adequate for the formulation of the theorems based upon it.

If utility breaks out of modern ordinalism, its reincarnation seems more likely to take a new form such as has been attempted in von Neumann and Morgenstern's risk index, or Armstrong's marginal preference, than to appear in its former shape, even as slightly modified by Dr. Bernardelli.

Sydney.

On Descriptions of Consumers' Behaviour

V. C. WALSH

In this paper I want to discuss some puzzles as to what is implied in the technical economic use of the concepts of "indifference", "preference" and "revealed preference". I would like to recall a position taken up by Mr. Little in his book on welfare economics. Mr. Little tells us that:—

> "... 'indifference' is a psychological term referring to a state of mind. If we have to imagine that indifference curves are to be drawn up in the above manner,[1] we cannot escape having a subjective interpretation of the system; for to say that one is indifferent as to whether one has A or B is the same as to say that one would find A or B equally satisfactory. We have seen that such an interpretation is absurd; therefore the word 'indifference' must be banished, or defined in behaviouristic terms. Can we take the latter course? When people are buying things, however indifferent they feel about the alternatives, they make a definite choice. Therefore if the theory is to be about objective choices, or economic behaviour, it appears that 'indifference' cannot enter into it in a significant manner.
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> "It might, however, be suggested that 'indifferent behaviour' could be defined in terms of how long it took to make a choice; but that would be very inconvenient. Alternatively, if an individual behaved inconsistently with respect to two collections of goods, choosing sometimes one and sometimes the other, we could say he was indifferent between them. But then we would be precluded from even saying that an individual preferred A to B, on the ground that he chose A, and rejected B; for next time he might make the opposite choice, in which case he must be held to be indifferent between A and B. Thus such a definition of the word 'indifference' would mean that we would have no economic criterion of 'preference'. Also we would have no criterion to distinguish between inconsistency and change of taste. But we need not bother ourselves with these puzzles about how to define 'indifferent behaviour', because the concept of 'indifference' plays no essential part in our logical system. It is logically much more satisfactory to get rid of it altogether."[2]

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[1] The manner referred to by Mr. Little was that where "a certain collection of things was taken, and the individual was asked to name all other collections, such that he was indifferent between each of these and the original collection". See, I. M. D. Little, *A Critique of Welfare Economics*, p. 21.

[2] Little, *A Critique of Welfare Economics*, pp. 21–22.

Professor D. H. Robertson, in his work, *Utility and all that*, comments on this in the following terms:—

> "... the juice of mentality seems to be uncommonly hard to keep squeezed out—it *will* keep seeping back even into models of ever-increasing desiccation. Was it worth while to go to such mountainous trouble to formalise in non-mental terms the behaviour of beings whom we have every reason to suppose to be equipped with minds ? "[1]

I shall try to show that Mr. Little's attack on the economic use of concepts like " indifference " is beside the point, because he mistakes what is involved in using " mental " words. If I am right it will follow that protests such as that of Professor Robertson miss the point too; because while Robertson, unlike Little, feels that " mental " words must be used, he gives no evidence of having questioned Little's analysis of what is involved in using them: he seems prepared to admit that in speaking of " preferences " we are speaking of the hidden causes of observable happenings. He simply holds that we cannot avoid speaking in this way.

I shall argue that Little falls into what is nowadays a very familiar mistake about mental words. To imagine that " indifference " refers to a " state of mind ", in a sense of the latter expression which entitles us to infer that if we are to avoid being " subjective " the word " indifference " must be banished or defined in behaviouristic terms, is to make the mistake of treating " indifference " as if it was used in just the way in which words which refer to occurrences are used. In the same way, to imagine that when a " preference " is " revealed "—as they constantly are—this kind of revelation exposes the existence of certain inner " mental " happenings, thought of as causing the consumer to behave as he does, is to make the same sort of mistake about " preference ". The truth is surely that " preference " and " indifference " have uses which differ, in at least one important respect, from the uses of any words used to refer to happenings, occurrences, events.

" Preference " and " indifference " are not the names of strange unobservable entities lurking in people's minds, whose presence or absence we can only infer in some very odd sort of way from observing how the people behave. As the words " preference " and " indifference " are ordinarily used, and presumably as they are used by economists, we can correctly be said to observe people's preferences and to notice when they are indifferent. For whatever else we may be saying when we say " So-and-soes prefer such-and-such "—and the force of particular uses of " prefer " may, of course, differ subtly—a very large part at least of what we are saying is literally that " If certain conditions are present, so-and-soes will take such-and-such ". It's perfectly correct English to affirm " I have known him for years and am well acquainted with his preferences, and X is certainly not one of them".

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[1] *Utility and All That*, pp. 21–22.

We speak of being acquainted with preferences just as we speak of being acquainted with people. We don't have to infer their preferences, unless we hold the sort of metaphysical view which commits us to believing that we only have inferred friends. We watch, often with eagerness, people's preferences developing, especially their preferences for other people. We notice, often with dismay, their indifferences, especially their indifference to us. Preferences are not hidden happenings, primarily because they are not happenings at all. Preferences and indifferences do not take place somewhere beyond our reach within the mind of another, because they do not take place at all. " Preference " and " indifference ", like other mental-conduct words, are—to use the jargon—dispositional: they are not correctly construed as making categorical assertions about happenings. They are used as a shorthand way of expressing what can be put more fully by the use, for instance, of a tendency statement to the effect that under such and such or such and such sorts of conditions, people will act in certain ways. To say that somebody is clever is not to hazard the unwarranted guess that acts of cleverness go on in his head, but is rather a brief way of putting the point that when he is posed a problem, set a task, asked to make an *impromptu* speech, caught by an emergency, or . . ., he tends to respond appropriately. To say that a consumer " has a preference " for coffee rather than tea is not to say that if only you could look into his mind you would see it there—for dispositions like preferences are not entities in any sense which makes it appropriate to speak of their being or not being somewhere; it is a way of saying that if certain conditions are present he will buy coffee rather than tea. The sentence " He has a preference " may be grammatically similar to " He has a red nose ", but the statements we make by using these two sentences have different logical force for all that.

To say that someone is indifferent as to whether he has coffee or tea is not to say that he performs acts of indifference in his head, and the fact that no such acts are to be found is no reason for giving up speaking of consumers' indifference. For to say that a consumer is indifferent as to whether he has coffee or tea need only be a shorthand way of saying that he is disposed, in similar circumstances, to take sometimes the one and sometimes the other. Little considers what is in effect a dispositional account of indifference, and rejects it for reasons which are very revealing. He rejects it because " we would be precluded from even saying that an individual preferred A to B, on the ground that he chose A, and rejected B; for next time he might make the opposite choice, in which case he must be held to be indifferent between A and B ".[1] This is a clear case of confusion between dispositional and occurrence words. Words like " choice " are occurrence words and refer to particular happenings; choices are acts; we can be correctly said to " make " them; we choose now this, now that, now the other thing. Words like " preference " do not stand for happenings, they are not the names of acts; it would be nonsense to say "I made ten preferences while out shopping this morning". Thus it is incorrect to want to say that an individual "preferred" A to B on the ground that he chose A and rejected B on a particular occasion, because to speak of an individual's preferences is not to speak of something he did on a particular occasion, but to make a quite different type of remark, to the effect that when such and such conditions are present the individual tends to respond in a certain way. To use the hackneyed example, saying that someone is a smoker is different from saying that he is smoking now, and does not entail and is not entailed by the latter type of remark.

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[1] *Op. cit.*, p. 22.

Nor is it to the point to present the economic analysis in terms of revealed preference in the way in which I think Robertson wants it presented, namely as if it were an indirect account of the visible results of invisible causes, the outward consequences of mental happenings. According to this view, to describe consumers' behaviour in terms of "revealed preference" is to say something—though to say it indirectly—about "states of mind": market behaviour reveals the existence of mental "phenomena", and although economists can study directly only the former, nevertheless its causes are certain hidden and unobservable happenings in the mind. On this view, an analysis of consumers' behaviour is an analysis only of the best available evidence as to what consumers prefer. But notice what this view implies: if what consumers do in markets is merely evidence of states of mind, and if it is to these states of mind that we refer when we speak of consumers' preferences, then observations of consumers' behaviour in markets are not the best conceivable access to these preferences—even if such observations are in fact the only available source of information for the economist. The point is that if preferences really were mental happenings, then the best conceivable evidence about them would be available only to the individual person whose mind contained a given set of these preferences. Other people, economists for instance, could know only as much as was "revealed" to them. This way of construing "revealed preferences" makes an account of consumers' behaviour in terms of these preferences seem indirect and uncertain in ways in which it is in fact neither indirect nor uncertain. Against such a view it is enough to repeat that preferences and indifferences cannot be hidden occurrences of a peculiar sort, for the simple reason that they are not occurrences at all; that they are not correctly regarded as the hidden causes of outward happenings, since again, not being happenings, they cannot be said to cause other happenings; and finally that, in discovering how consumers are disposed to behave we are not discovering indirect evidence about their preferences and indifferences, we are, quite simply, discovering those preferences and indifferences.

It is unhappy that an economic analysis of consumers' behaviour should appear as a set of indirect assertions about mental occurrences because it is misleading to present a model belonging to one category in terms appropriate to another. The theory of consumers' choice is about *economic* relations with which we are all familiar, and it is inappropriate to make it look like a psychological story about mental " goings on ". A physical account would describe the occurrences which had caused an action, and a psychological account would have something to say about the motives which were the reason for the action. But an economic account is different from either of these. Economics is neither physics nor psychology and it isn't to the point to make it look as if it were. When economic analyses are written so as to look " psychological ", critics of economics immediately say that the science is based on psychology, and on an out-of-date and bad psychology at that. This sort of mistake is less likely to be made if economists' psychologically neutral propositions are not expressed in a misleading psychological language, and if their theories are so phrased as to have the right logical character for expressing economic propositions.

So much by way of an outline of my position.

" But," it may be said, " what about a situation like this: I prefer whiskey to tea, but when my aged aunt comes to stay with me I buy tea and I drink it myself, so as not to offend the old lady. Then I could surely say that, of course, I *really* preferred whiskey all the time, but I took tea. So it looks as if saying ' I prefer whiskey ' can't literally mean the same as saying just ' I take whiskey '."

The answer, of course, is that I never said it did: what I did claim was that saying " I prefer whiskey " was, at least roughly, a way of saying " if such and such conditions hold, I shall take whiskey ". If I prefer whiskey to tea, then I will tend to buy the former rather than the latter provided that certain conditions are fulfilled—such as that I have not got an overriding preference for some other commodity such as " good relations with my aunt ". Now some people might be tempted to describe the situation about the aunt thus: " he really prefers whiskey, but he is keeping it dark. His true preferences are hidden in his mind, so that one can only guess, or at best infer from indirect evidence, what they are." But this would be a mistake: what I really prefer is " good relations with my aunt ", and you have only got to look at me to see this.

I put it to the objector: does it make sense to say " of all available sets of goods, I prefer the set X, but I never take it ". It may be retorted that this looks like a self-contradiction, as it has been put—but isn't it a long familiar fact of our experience that something like this often happens? Don't we often really prefer one set of goods, one lot of people, one sort of life, and yet find ourselves cleaving to another—perhaps because of some obsession which we can't control? My comment is, doesn't " prefer " look very oddly used in the above? What sort of dispute is this? Surely it is not a factual dispute at all;

it's more like asking " is unintentional promise-keeping, promise-keeping ? ". The answer is surely to point out that, as we ordinarily use " prefer ", it is distinctly odd, if not meaningless, to say that someone does not choose to do what he most prefers. I suppose no economist nowadays would want to deny that a widely revealed preference on the part of consumers for sadistic films or comic strips counted as a " preference ", merely because it was due to—say—the consumers' unhappy childhoods. Saying, for instance, " true preferences sometimes aren't acted on " thus turns out not to be a factual assertion at all, but a recommendation that we appraise certain consumer demands differently from others. But this grading operation is not part of the task of any economic statement.

The economists' expression " revealed preferences " suggests that there might also be " hidden preferences ". It is important to see in what sense this is true, and in what sense it is simply nonsense. Preferences, like other dispositions, show themselves at the appropriate times, in a suitable setting—unless indeed they have aquired the strength of obsessions. We can meet someone in town without discovering that he is a yachtsman, and we can know people quite well at home without being in a position to say what they prefer to do when they go abroad. But it does not—I believe—make sense to speak of there being " hidden preferences " like the supposed preference for whiskey, preferences which never show in the circumstances in which—if anywhere—they might be expected to reveal themselves. Saying that I have a hidden preference for whiskey, in this sense, could only be a misleading way of saying that although I prefer whiskey to tea, there is something else which I prefer to whiskey. Such " hidden preferences " would be just less preferred alternatives, and they would not be *hidden* in any interesting sense, because they would not be important factors locked from the economist's view in the secret chambers of the consumer's mind—they would be unknown to the economist and undiscoverable by him only in the uninteresting and trivial sense that the consumer had not happened to have them. But the economist is concerned with the preferences people have and not with the preferences they might have had.

Another objection, which is perhaps more serious, might be put by asking: " do we want to interpret our language in such a way that no meaning is attached to saying ' I prefer X ' unless X is in fact available and I am taking it ? Will not this sort of linguistic habit, if adopted, make it extremely difficult to attack any economic system for having certain shortcomings against which a liberal-minded person would wish to protest ? We want to be able to say that under a dictatorship many people's preferences are frustrated, they cannot have the things that they prefer. Economists do not, of course, need language to perform ethical tasks, but this does not entitle them to ask that words like ' prefer ' should be construed in such a way that they become unable to do the job of making ethical appraisals when needed for this. And anyway economists themselves, while confining themselves to the type of assertion which it is their job to make, want to be able to discuss the extent to which various economic organisations do in fact reflect the preferences of consumers."

My reply to this is that the economist does not need to recommend a linguistic change, with the suggested disadvantages or others: he has only to attend to the way in which the word " prefer " is currently used, and it becomes obvious that the supposedly needful use of " prefer " is abnormal and otiose. Suppose I say " I prefer to bathe in the nude ". It would surely be natural to ask " Oh? Where and when do you do it—before the sun comes up, in a secret cove, or in Scandinavia? " And it would be thought very odd if I were to reply that I didn't do it at all; people would then be inclined to say " what you mean is, you *would* prefer bathing in the nude if you got the chance ". Thus it does no violence to the needs of the liberal-minded to say that the correct use of " I prefer so-and-so " is to refer to an actually present alternative, which is in fact chosen on the appropriate occasions. We can always say " I would prefer so-and-so " in speaking of the things we would demand if we only had the chance.

It may be worth explicitly pointing out that it does not follow from the view I have been suggesting—unlike that adopted by Little—that a correct and " objective " account of consumers' behaviour cannot be written in " mental terms " in any sense. " Prefer " and " indifferent " are, if you like, mental-conduct words—so are " plan ", " expect ", " economise ", " anticipate ", and a number of others constantly used in economic analysis. I have tried to show why the use of the mental-conduct words " prefer " and " indifferent " does not make a theory " subjective " or " psychological ". There is nothing objectionable in the use of these words as such: using mental-conduct words is not necessarily doing psychology, nor is it making inferences from unseen happenings. Mental-conduct words, as used in economics, need have no " psychological " content which is absent from their uses in ordinary language. These words are not newly constructed symbols about whose correct use the economist has to make up his mind all by himself. He can use them as they are used in ordinary speech and there need be no difficulty about how to apply them. We all know the application of remarks like " you will find he would prefer that ", " it's a matter of complete indifference to her ", " gentlemen prefer blondes ", " the English do not care what sort of coffee they drink ". It is important that the economist should make it clear that words like " preference ", as used by him, need contain no " psychological " implications absent from their ordinary uses.

Finally, the interpretation of the economic theory of consumers' behaviour which I have been advocating—unlike Little's—is not " behaviouristic ", except in a trivial sense. It is true that on the view I have adopted statements about preferences and indifferences are always testable by observation; but the propositions of any science are

" behaviouristic " in this sense. " Behaviourism " in the strong sense, however, is not involved: I have not denied that people " have minds ", or claimed that they are " just machines ". I have explicitly drawn attention to the specifically mental performances of choosing in accordance with settled dispositions, preferences and indifferences. I have laid special stress on the fact that words standing for dispositions of mind have different logical force from any words used to refer to physical occurrences. All this would hardly appeal to a true blue behaviourist. Of course, I have said that we can discover people's preferences, and watch them grow indifferent, and this has a " behaviouristic " ring. But when we are not reflecting we all believe that we can do just this, the more so because we can make mistakes and afterwards correct them.

To sum up: I think that I have shown that " indifference " is not a " psychological term " referring to a " state of mind " in any sense of these expressions which would justify us in holding that the use of the concept of " indifference " in accounts of consumers' behaviour renders such accounts " subjective ". The concept of " indifference " need neither be banished nor defined in " behaviouristic terms ". A theory can be about " objective choices " and " economic behaviour " and yet " indifference " can " enter into it in a significant manner ". The same goes for " preference " and " revealed preference ". An economic theory does not become " subjective " through saying that people have preferences, or even by saying that people " reveal " these preferences in market behaviour. No methodological gain is achieved by trying to get rid of these concepts in economic accounts of consumers' behaviour: their use introduces no irrelevant psychological matter, and there is therefore no Occamist argument in favour of trying to do without them. Nor is there anything to be said for any special technical notation which is offered on the ground that if we adopt it we shall be free from the danger of referring to unobservables.

The London School of Economics.

Edmund Burke as an Economist

DONAL BARRINGTON

" The age of chivalry is gone: that of sophisters, economists, and calculators, has succeeded; and the glory of Europe is extinguished forever."[1]

It seems almost sacrilegious to accuse the writer of this famous passage of being an economist himself, and not many people have attempted to do so. The romantic language in which Burke has clothed much of his philosophy might lead one to imagine that he was not interested in the ordinary affairs of mankind, and as economics is concerned with very little else, that he was not interested in economics. Indeed, Melchior Palyi, discussing the relation between Burke and Adam Smith, wrote, " their ideas, their methods, even their problems, were decidedly different, as different as the men themselves and their personal careers ".[2]

Such an impression is false. One can over-emphasise the romantic element in Burke. In fact he was so concerned with the happiness of ordinary men and women that some writers have called him a utilitarian. That, I think, is putting the point too strongly, but utilitarianism was an important factor in his political philosophy.

Moreover, an interest in the nobler and more spiritual aspects of man's nature does not preclude one from being acquainted with the manner in which he earns his bread. Indeed the career of Lord Keynes shows that one can become a great economist through sheer annoyance at man's having to spend so much time earning his living.

Burke had a sound grasp of the central principles of political economy. He was the first great English statesman to preach Free Trade and he is entitled to be considered as one of the pioneers of economic science.

How Burke acquired his great knowledge of economics is not easy to explain. But it is not much more difficult to account for his grasp of this subject, than it is to trace the origins of his vast knowledge of almost every other branch of human learning. " Single speech " Hamilton, who employed Burke for six years, from 1759 to 1765, as " companion " in his studies, said of him that he understood everything in the world except music and gaming.[3] On another occasion Hamilton remarked to a friend that, though he himself was a Lord of

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[1] *Works* (Little and Brown), Boston, 1839, (9 Vols.), Vol. III, p. 98.

[2] " The Introduction of Adam Smith on the Continent ", in *Adam Smith, 1776–1926*, by John Maurice Clark and others, p. 181; see also an article by W. C. Dunn, " Adam Smith and Edmund Burke: Complementary Contemporaries ", in *The Southern Economic Journal*, January 1941, Vol. VII, No. 3, p. 330.

[3] Sir Philip Magnus, *Edmund Burke*, p. 17.

Trade, though he had access to all the official documents, and though he had studied them conscientiously, nevertheless he felt at a loss when talking to Burke, so great was Burke's knowledge of this subject.[1]

Burke probably spent part of his six years with Hamilton studying political economy.[2] But long before this, while still a student in Trinity College, Dublin, he seems to have envisaged that the scattered principles of economics could be gathered together into a definite science. In *The Reformer* he lamented the sad condition of Irish trade and suggested that the nobility should patronise the study of trade just as they patronised the other branches of learning. Burke approved of the activities of bodies like the Dublin Society but thought that it was also necessary for private individuals to take up the study of trade as a definite branch of learning:—

> " Nothing comes to its height at first," he wrote, " and the Spirit of encouraging Trade, may at length rise to Science. What has been done hitherto has been by Bodies of Men, few have had the courage singly to venture any Thing, tho' private Men have always been the Support of Works of Politeness."[3]

This was written in 1748 when Burke was eighteen years old. Eleven years later, Dr. Markham, the headmaster of Westminster, writing to the Duchess of Queensbury to recommend Burke for the post of consul in Madrid, remarked that his chief application had been to the knowledge of public business and to the commercial interests of Great Britain; that he seemed to have a most extensive knowledge, with extraordinary talents for business, and to want nothing but ground to stand upon to do his country very important services.[4] Some years later the " all-knowing " Jackson said to Dr. Johnson that his " Journey to the Western Islands of Scotland " contained more good sense about trade than would be heard for a whole year in Parliament " except from Burke ".[5]

On his entry to Parliament in 1766 Burke had quickly established a reputation for himself as an expert on problems relating to trade and commerce. Shortly after his first speech, General Lee wrote to the Prince Royal of Poland that an Irishman, one Mr. Burke, had sprung up in the House of Commons, who had astonished everybody with the power of his eloquence, his comprehensive knowledge of all the exterior and interior politics of Great Britain and of her commercial interests.[6]

In October 1766 the Duke of Grafton wrote to Chatham suggesting that they try to attach Burke to the Ministry by making him Lord

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[1] Edmund Burke, *Thoughts and Details on Scarcity*, London, 1800, Preface, p. VI.

[2] Bertram Newman, *Edmund Burke*, London, 1927, p. 19.

[3] *The Reformer*, No. 6, reproduced in Samuels' *Early Life of Burke*, p. 314.

[4] Prior, *Life of Burke*, 5th ed., London, 1884, pp. 62–3.

[5] Boswell, *Life of Johnson*, Oxford edition, 1904, Vol. II, p. 105.

[6] Lee to the Prince Royal of Poland, December 26th, 1766, in *Lee's Memoirs*, Dublin, 1792, p. 297.

Commissioner of the Board of Trade. Chatham rejected this suggestion. He admitted that Burke was a man of great ability, but considered that his views on trade were too unorthodox. " As to his notions and maxims of trade," he wrote, " they can never be mine. Nothing can be more unsound and repugnant to every true principle of manufacture and commerce, than the rendering so noble a branch as the Cottons dependent for the first materials upon the produce of French and Danish islands instead of British ".[1] The great debate on Free Trade had begun.

In his speech on his arrival in Bristol in 1774 Burke himself bore testimony to his economic studies. When first he devoted himself to the public service, he had considered how he should render himself fit for it: and this he did by endeavouring to discover what it was that gave England the rank she held in the world. He found that her prosperity and dignity arose principally, if not solely, from two sources, her constitution and her commerce. Both these he had spared no study to understand, and no endeavour to support.[2]

Many years later, when, in his " Letter to a Noble Lord ", he was answering the attacks which the Duke of Bedford and the Earl of Lauderdale (the noted economist) had made on his pension, he wrote that he had not come into Parliament to con his lesson. He had earned his pension before he set foot in St. Stephen's Chapel. During his first session in Parliament he had found it necessary to analyse the whole commercial, financial, constitutional and foreign interests of Great Britain and its empire.[3]

He continued with the following most interesting passage:—

> " Does his grace think that they who advised the crown to make my retreat easy, considered me only as an economist ? That, well understood, however, is a good deal. If I had not deemed it of some value, I should not have made political economy an object of my humble studies, from my very early youth to near the end of my service in parliament, even before (at least to any knowledge of mine) it had employed the thoughts of speculative men in other parts of Europe. At that time it was still in its infancy in England, where, in the last century, it had its origin. Great and learned men thought my studies were not wholly thrown away, and deigned to communicate with me now and then on some particulars of their immortal works. Something of these studies may appear incidentally in some of the earliest things I published. The house has been witness to their effect, and has profited of them more or less for above eight and twenty years."[4]

The remark about the " great and learned men " who communicated with Burke on some particulars of their " immortal works " almost certainly refers to Adam Smith and the *Wealth of Nations*. The two men greatly admired each other. When Smith read Burke's essay on the " Sublime and Beautiful "—the first work which Burke published under his own name—he remarked that the author would be a great acquisition to Glasgow University " if he would accept of a chair ".[1] Some time later, in the year 1759, Hume, who was attempting to popularise Adam Smith's *Theory of Moral Sentiments* in London, sent Burke a copy, pretending that the present had come originally from Smith.[2] Burke was very much taken by the book and asked Hume for Smith's address.[3] In the same year he reviewed the book very favourably in the *Annual Register*.

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[1] Chatham to Grafton, October 19th, 1766, in *Autobiography and Political Correspondence of Augustus Henry, Third Duke of Grafton*, ed. by Sir William Anson, London, 1898, p. 108.

[2] *Works*, Vol. II, p. 4. [3] *Works*, Vol. IV, p. 298. [4] *Ibid*, pp. 298–99.

The *Wealth of Nations* was also reviewed in the *Annual Register* but we cannot be sure that this review was written by Burke. Burke was still in charge of the *Annual Register* in 1776 and was, in fact, still writing most of it. But he had an assistant, so that we cannot be sure that he wrote this particular review. On the other hand it is quite probable that he did, especially as Smith was a friend of his, and as he was so interested in economics. The style in which the review is written would also appear to support the theory that Burke wrote it.

The reviewer praises the work highly. He also shows himself to be acquainted with the writings of the Physiocrats. " The French œconomical writers," he says, " undoubtedly have their merit. Within this century they have opened the way to a rational theory, on the subjects of agriculture, manufactures, and commerce. But no one work has appeared amongst them, nor perhaps could there be collected from the whole together, anything to compare with the present performance, for sagacity and penetration of mind, extent of views, accurate distinction, just and natural connection and dependence of parts."[4]

Burke and Smith may have met as early as 1759. Certainly they knew each other by 1775 when Smith was elected a member of Dr. Johnson's Club. They became close friends and they saw a lot of each other during the two years Smith spent in London after the publication of the *Wealth of Nations*. Burke went to Glasgow in 1784, upon his election as Lord Rector of Glasgow University. He spent about ten days in Scotland. Where he stayed we do not know, but he certainly spent most of his time in the company of Smith, who was then Professor of Logic at the University.[5]

Bisset gives an account of an interview which a " very eminent literary gentleman " had with Burke shortly before the latter's death. Burke, it seems, spoke in very flattering terms of Smith, described him as a man of profound and extensive learning, and said that his work would be of great value. He added that Smith's heart had been "equally good with his head" and his manners "peculiarly pleasing".[1]

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[1] Letter from Dugald Stewart to Sir James Prior in Prior's *Life of Burke*, p. 38, footnote.

[2] *Letters of David Hume*, ed. by J. Y. T. Greig, Oxford, 1932, Vol. I, p. 303.

[3] *Ibid.*, p. 312.

[4] *Annual Register*, 1776, Part II, p. 241.

[5] John Rae, *Life of Adam Smith*, London, 1895, p. 388.

Dr. Johnson did not consider an occasional sally into the economic field beneath him, and with Burke and Smith such keen students of economics, it seems strange that that subject was so seldom mentioned in the Club. Perhaps the reason was that Johnson strongly disliked Smith, while Smith had ample reason to resent Johnson's rudeness.[2] Or perhaps it was that Johnson, who liked to argue for victory, preferred to avoid a subject about which Smith and Burke knew so much more than he did.

Burke and Smith being friends, it might seem reasonable to conclude that Burke borrowed his ideas on economics from Smith. No doubt Smith did influence him, but, nevertheless, Burke appears to have reached his main conclusions independently. We have seen that while still in college he had been interested in the study of trade, and that he himself claimed to have studied political economy long before, to any knowledge of his, it had engaged the thoughts of speculative men elsewhere in Europe. These claims are corroborated by a remark attributed to Smith. He is reported as having said that Burke was the only man he ever met who thought exactly as he himself did on economic problems without any prior communication having passed between them.[3]

Indeed, it would seem that Burke not only arrived at his conclusions independently of Smith but that he actually assisted Smith on some points. Thomas Moore reports in his *Memoirs* an interesting remark of Wordsworth's. Wordsworth complained of the ignorance of politicians. Burke, however, he said, had been an exception. He was by far the greatest man of his age. Not only did he abound in knowledge himself, but he helped his most able contemporaries in almost every field of study, "assisting Adam Smith in his *Political Economy* and Reynolds in his *Lectures on Painting*[4]". Wordsworth's statement that Burke assisted Reynolds is correct, and his statement about Smith may also be accurate.

In fact it fits in very well with Burke's remark about the "great and learned men" who had discussed economic problems with him. But we have another piece of evidence. This is contained in the preface to an edition of Burke's *Thoughts and Details on Scarcity* which was published in 1800. This little pamphlet is the most important of Burke's economic writings, but it was not published during Burke's lifetime. In its original form it was a memorial which Burke presented to Pitt in 1795. Burke had intended expanding it into a series of Letters on Rural Œconomics addressed to Mr. Arthur Young.

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[1] Bisset, *The Life of Edmund Burke*, 2nd ed., London, 1800, Vol. II, p. 424.

[2] John Rae, *Life of Adam Smith*, pp. 154–8.

[3] Bisset, *Life of Burke*, Vol. II, p. 429.

[4] Moore, *Memoirs, Journal and Correspondence* (8 Vols.), London, 1853–56, Vol. III, p. 162.

Unfortunately, he had hardly begun this task when he heard of the peace negotiations between France and England and he abandoned it to write his Letters on a Regicide Peace.

Upon Burke's death in 1797 his two most loyal disciples, Dr. French Laurence and Dr. Walker King, were entrusted with the care of his papers.[1] Three years later the *Thoughts and Details on Scarcity* appeared. It consists of the memorial addressed to Pitt in 1795 expanded to include some fragments, which the editor had discovered, of Burke's proposed Letters on Rural Œconomics.

The editor does not give his name but the Preface is dated " Beaconsfield, Nov. 1, 1800 ". " Beaconsfield," of course, was the home of the Burke family, and it is more than probable that the editor was either Dr. French Laurence or Dr. Walker King. Of the two it is more probable that the editor was Dr. French Laurence as he is known to have been interested in economics. That Laurence was in fact the editor is virtually proved by a remark made in a letter quoted by Arthur Young in his *Autobiography*. The letter is dated November 30, 1800, and refers to Burke's pamphlet " very lately published by Dr. Lawrence ".[2] Laurence is a very valuable witness because, as I pointed out already, he was one of Burke's most loyal and intimate disciples and was also interested in economic problems himself.

The preface speaks of Burke's vast knowledge of the British commercial system. It refers to the great reputation which he quickly won in Parliament as an expert on economic affairs. Yet, it continues, despite his early fame as an economist, he studied political economy all his life, and made use of every opportunity which turned up to examine the economic systems of other countries. As a result of these studies he daily became more convinced that the " unrestrained freedom of buying and selling is the great animating principle of production and supply ".[3] But, most important of all, the preface states that Burke was " consulted, and the greatest deference was paid to his opinions, by Dr. Adam Smith, in the progress of the celebrated work on the Wealth of Nations ".[4]

Burke's economic ideas might have been expected to attract the attention of merchants and, in actual fact, they did. During the course of his career addresses of thanks poured in on him from nearly all the mercantile cities of Ireland and England, and he received the freedom of many of the most important centres of trade. His economic opinions also got him into difficulties, as when he lost his seat at Bristol largely through advocating Free Trade for Ireland.

It would serve no useful purpose to examine in detail the numerous addresses of thanks which Burke received. But it is perhaps worth while to have a glance at one specimen. The following is a portion of an address which the merchants of Lancaster sent to Burke in June 1766, six months after he entered Parliament:—

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[1] *Corr.*, Vol. I, Preface, p. III.

[2] J. Symonds to the Speaker of the House of Commons, November 30th, 1800, in Young, *Autobiography*, London, 1898, pp. 344–46.

[3] *Thoughts and Details on Scarcity*, London, 1800, Preface, p. VII.

[4] *Ibid.*, p. VI.

> " SIR
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> With hearts full of gratitude and respect, we, the merchants of Lancaster, beg leave to return you our most sincere thanks for the great attention you have given to the commercial interest of Great Britain and her colonies, during the last long and laborious session of parliament, both by removing obstructions that lay in the way of commerce, and opening new sources of trade; from which we have the most sanguine hopes, that, in future, the manufactures and navigation of this kingdom will be greatly increased and extended. . . ."[1]

I think we may safely conclude, therefore, that Burke had a considerable grasp of the principles of political economy; that he was a Free Trader; that he arrived at his conclusions independently of the work of Adam Smith; that Adam Smith respected his opinions on this subject and even consulted him on points; and that he is therefore entitled to be considered as a pioneer of economic science. Moreover, by his speeches in Parliament, he introduced the new principles of economics to the politicians of the day, and the amazingly rapid success of the *Wealth of Nations* may have been, in part, due to the fact that Burke had prepared men's minds for it.

Dublin.

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[1] *Corr.*, Vol. I, p. 104.

Book Reviews

Essays in Positive Economics. By MILTON FRIEDMAN. University of Chicago Press. Cambridge University Press. 1953. 328 pp. $5.75. 43s. 6d.

Professor Friedman's reputation as an acute and agile theorist stands deservedly high both here and in America. The present volume brings together a number of his essays, published and unpublished, in the realm that he calls " positive economics ". Not all of his best articles are here ; neither of his two articles with L. J. Savage on the analysis of individual behaviour under uncertainty are present, nor is his stimulating discussion of Wesley Mitchell's business cycle theory. It is perhaps perverse of this econometrically-minded reader to regret that the term positive economics could not have been stretched so that Friedman's famous papers on the analysis of variance by ranks could have been included; but he regrets it nevertheless.

Enough is provided, however, to make an enjoyable feast, though perhaps some readers should be warned to take part of it *cum grano salis.* The book opens with a previously unpublished long and careful exposition of Friedman's methodological position, after which his reviews of Lange's *Price Flexibility and Employment* and Lerner's *Economics of Control* follow naturally, though placed at the end of the book. More than most economists, Friedman is prepared to judge the validity of a hypothesis in terms of its predictive power, rather than on the " realism " of the hypothesis itself. This view can be carried to rather absurd extremes, but temperately used its effect is salutary and rewarding. This methodological sermon over, Friedman turns to examine the Marshallian demand curve, and the proposition concerning the welfare advantages of a direct tax over an indirect tax. In each case, particularly the former, he has important new interpretations to offer, and each case affords a text for a brief reiteration of the above sermon.

The main body of the book consists of a number of essays on domestic and international monetary and fiscal policy. The first is an English version of an essay on full employment policy already published in *Economie Appliquée.* While Friedman is not a mathematical economist in the sense that, say, Samuelson is, some of his work has a quite distinctive mathematical flavour. He often applies *statistical* theory to problems of economic theory, with fascinating results; and this short paper is an interesting example of this tendency.

Others contained in this set of papers on monetary and fiscal policy include a previously unpublished and forcefully argued chapter advocating flexible exchange rates, and a sympathetic but devastating criticism of the proposals for a commodity reserve currency. One is reminded of the description of Marshall's lecture on Henry George—" like a boa constrictor which slobbers its victim before swallowing it ".

Professor Friedman is perhaps the most able living representative of that school of Chicago economists associated with the name of Henry Simons. However much one may disagree with their assumptions and conclusions, it is none the less true that they constitute one of the few bodies of economists with a coherent, logically consistent, and well developed approach to the problems of economic policy, and their views command respect. This point of view pervades Friedman's entire collection of essays, and gives a slightly paradoxical air to the title, for in many of the essays Friedman is not afraid to make policy recommendations, notably in the chapter on flexible exchange rates. But he is nothing if not honest, and is always careful to state the value judgments implicit in his analysis.

This, then, is a book of essays devoted to drawing the conclusions implied in a particular methodological and political (in its widest sense) standpoint; and it is in this respect that it is positive economics, rather than in the sense that no or merely colourless value judgments are made. As such it is stimulating, provocative, often infuriating, but well worth reading.

PETER NEWMAN.

United States Economic Policy and International Relations. By RAYMOND F. MIKESELL. McGraw-Hill Publishing Co. Ltd. 1952. xii + 341 pp. 40s. 6d.

This is a survey and analysis of the foreign economic policy of the United States from 1919 to about mid-1951. It covers international financial, commercial and investment policy and foreign economic assistance. Although the major theme is American policy it contains useful surveys of international organisations and developments—I.M.F., I.B.R.D., G.A.T.T., O.E.E.C., E.P.U. and so on.

The section on the inter-war years (one-quarter of the volume) is intended only as background. It helps to explain inconsistencies in post-war policies and the way in which instruments designed to achieve pre-war policies are still being used to further the different ends now desired. For example, tariff reductions are still being negotiated on the basis of reciprocity although the objectives of the Administration are, the author claims, now much wider than at the time of the original Reciprocal Trade Agreements Act, which was designed largely to secure concessions for American exporters.

Professor Mikesell's volume is in the Economic Handbook Series edited by Professor Seymour Harris. It is thus intended primarily for students and the reader must not expect to find in it much that has not already appeared in the author's other writings or elsewhere.

It was also necessary to cover a wide field in a volume of reasonable size. Professor Mikesell has successfully compressed a great deal into his three-hundred-odd pages, but it is inevitable that each reader will find particular sections too short for his liking. The present reviewer would have liked a fuller treatment of the case for and against an increase in the dollar price of gold and of the arguments for and against discrimination. The need for brevity may possibly lead some of Professor Mikesell's readers to think that the case for discrimination necessarily disappears when currencies are convertible. For example, he writes: " The restoration of the convertibility of sterling . . . would enable a large part of the non-dollar world to dispense with discriminatory exchange and trade controls " (p. 178); and, " during the 1930's, there was no general dollar shortage since the key currencies . . . were all convertible into the dollar " (p. 163). All this is true in a sense, but there may also be dollar shortage in a very real sense, and a case for discrimination to keep up non-dollar trade, even when all currencies are convertible—although the incentive for individual countries to discriminate is then, of course, much smaller. Again, one would have liked a little discussion of the ticklish provision in the Anglo-American Financial Agreement that " any discrimination arising from the operation of the so-called sterling-dollar pool would be eliminated " (p. 173).

But a survey of this kind cannot deal with everything and Professor Mikesell has made his selection with skill and judgment. He is also completely fair and objective. He recognises the shortcomings of U.S. policy and talks, for example, of the " lack of economic leadership and sense of international responsibility which characterised American international relations during the inter-war period " (p. 74). He understands the points of view of other countries, such as their different ideas about cartels and state trading and the difficulty of carrying out rapid economic development in a backward country without resort to import restrictions. " We do not need to remake the world in our own image in order to save it " (p. 4). He condemns neither the U.S. nor other countries for the policies followed. His practical experience has taught him that in framing international economic policy many inconvenient political facts enter into the data.

Professor Mikesell sets out succinctly the main arguments that have been used on each side in some of the most important controversies. He not infrequently gives his own opinion but always separates this clearly from the rest of the discussion. In general he favours a liberal policy for the United States, including the unilateral reduction of tariffs. He even questions the national defence argument for protection of the United States mercantile marine, at least when a nation " organises its defense in cooperation with a number of closely allied powers " (p. 76).

This is an authoritative, sensible survey, by an author who is no doctrinaire, of an important series of topics. It can safely be recommended to students and will be a useful work of reference.

DONALD MACDOUGALL.

International Economics. By CHARLES P. KINDLEBERGER. Richard D. Irwin, Inc., Homewood, Illinois. 1953. xx + 543 pp. $8.

This is a textbook for students who are making a fairly thorough study of international economics at the undergraduate level. The book is analytical rather than descriptive. The author bases his discussion of each topic upon an exposition of the relevant theoretical analysis; and in presenting the analysis he makes extensive use of geometrical techniques. Descriptive material is introduced to illustrate particular analytical points. With the exception of one chapter which is completely devoted to a discussion of the European Recovery Program (as an example of problems of restoring equilibrium to balances of payments) the reader will not find systematic and detailed discussions of the existing international organisations in the economic field nor of the current policies and trends in international economic and financial relations. But he will find a systematic treatment of the main applications of economic analysis to international economic problems,—covering, for example, the gold standard, variable exchange rates, exchange control, comparative costs, reciprocal demand, commercial policy, capital movements, the transfer problem, economic development of underdeveloped countries, and income and price effects in balance-of-payments problems.

On the whole, the author keeps to the limited objectives of the textbook, a straightforward exposition of more or less accepted analysis. But in spite of this he achieves a welcome freshness of approach to many of the problems, of which the following are two examples. First, unlike many other authors, he devotes a whole chapter (Chapter 7) to transport costs and the location of industries, thus recognising the fact which many of us so often forget that international trade has got something to do with the economics of space. Second, the two chapters (Chapters 19 and 20) which he devotes to problems of economic development provide an admirable introduction to this increasingly popular and important topic on which it is so easy to be merely woolly and imprecise.

All books have blemishes, and this book is no exception to that general rule. There are—or so it appeared to the reviewer—one or two minor inaccuracies in argument, but it would be pedantic to lay any stress on these. More important is the omission from the discussion of one or two important problems. Perhaps it is the arrangement of the book around a discussion of the different items in the balance of payments which leads the author to discuss international capital movements but to say nothing of the international migration of labour or, indeed, of the international aspects of demographic changes. This in the modern world is surely a serious omission. Nor is there any extensive discussion of the way in which international trade, as contrasted with international factor movements, may tend to equalise factor prices within the trading countries—a brand of economic analysis which is playing an increasingly important rôle in discussing many problems of international economics.

Any teacher of international economics, if he wishes to select one general text for recommendation to his students, would be well advised to treat Professor Kindleberger's book as a serious candidate. It will have special attraction for any teacher who believes that the first systematic treatment of the subject should be based on the relevant theoretical analysis, leaving the descriptive and applied problems to rather more selective and *ad hoc* reading. But the question remains whether or not it will prove entirely successful in making the analysis clear to the undergraduate student. Perhaps this question can be answered only by experience; but the present reviewer in reading the book was left with some doubt whether in some passages the exposition made the points as lucidly as they might have been made. But perhaps responsibility for these doubts must be laid upon the difficulty of the subject-matter at least as much as upon any obscurity on the part of the author.

J. E. MEADE.

The Economics of Resale Price Maintenance. By B. S. YAMEY. Sir Isaac Pitman & Sons Ltd. 1954. ix + 182 pp. 25s.

Resale price maintenance, as a special type of restrictive practice, has long been the subject of enquiries, official and academic, both in this country and abroad, and the practical and theoretical issues that have emerged are well known to students of applied economics. Yet, in this country, a full-scale, systematic treatment by a professional economist was lacking, and Mr. Yamey has performed a useful service in filling the gap. He has dealt with resale price maintenance as an issue in economic policy that calls for a practical solution. His approach has been by the several ways of analysis, history and observation of current affairs, and by his skilful deployment of information and argument he has made a valuable contribution to what is an interesting academic problem as well as an important question of policy. As his exposition is lucid and straightforward, Mr. Yamey's book, it is to be hoped, will have an influence upon opinion.

The book has two parts. In the first and major part, the author discusses the problem of resale price maintenance as it affects manufacturers, retailers, wholesalers and consumers, and he speculates upon the results likely to follow the abolition of the practice. The second part contains a history of price maintenance in certain trades and serves both to illustrate the arguments and conclusions of the first part, and also to show how the initiative in introducing the practice came to be taken. The discussion of resale price maintenance in its relation to manufacturers is of particular interest; notably, the analysis of the probable effects of the abolition of the practice upon different classes of manufacturers and on the sales of different types of goods. Since the advocates of resale price maintenance make so much of the " loss-leader " argument, readers will be impressed with Mr. Yamey's conclusion that this argument is " the red herring of the price maintenance controversy ". So far as concerns the retail trade generally, the author's view is that the practice " works in favour of established firms by retarding change and by eliminating price competition, the most effective instrument of change ".

In summarising his conclusions, Mr. Yamey declares that " the real issue in the price maintenance controversy is the conflict between the interests of consumers and the interests of suppliers (principally, but not exclusively, those of distributors and their employees) ". He cannot stomach the Lloyd Jacob compromise which would abolish collectively enforced resale price maintenance but would leave individual price maintenance undisturbed. He argues that the adoption of that proposal would be extremely arbitrary in its effects on different trades and that it would probably promote concentration in industry and impede the progress of new firms.

G. C. Allen.

Western Enterprise in Far Eastern Economic Development. By G. C. Allen and A. G. Donnithorne. Allen & Unwin. 1954. 292 pages. 20s.

The present volume deals with China, which gets most of the space, and Japan. We are promised a companion volume on Malaya and Indonesia.

Western enterprise engaged mainly in foreign trade. But in order to bring about an expansion of exports, and consequently of imports, in an underdeveloped country, progress is required in related fields. Inland transport must be improved to bring a bigger flow of exports to the ports; ocean shipping must be available; banking and insurance facilities are needed. Possibly the exports must be processed to change them into a form suitable for overseas markets, or to ensure uniformity of quality.

In China, as the present volume shows in some detail, these services had to be provided by the foreigners themselves, and general merchant firms soon launched out into other activities such as the processing and grading of exports, shipping, and banking and insurance.

No doubt western enterprise brought some benefits to China. In the days of the East India Company (when trade was confined to Canton) almost the sole export was tea. A wide range of exports was developed under western guidance, so that goods formerly of little value were sold abroad at good prices. Transport, banking, and other services were provided or improved. Import commodities were made available. Various improvements in methods, which raised productivity, were introduced. We are told that wages were substantially higher in western establishments and near the foreign settlements.

Nevertheless, China remained largely underdeveloped. With a fifth of the world's population, she has never had more than about 2 per cent. of world trade, and little over a million workers in manufacturing; and her standards of living have remained very low. The authors attribute this largely to the hostility of the Government to foreign methods and products. Foreigners had to be admitted, under the treaties, but their activities were hampered at every turn. Thus progress was delayed in railways and mining, and the major export industries, tea and silk, could not be reorganised on a competitive basis. When a different attitude began to prevail, in the nineteen thirties, China was torn by invasion and civil war.

Moreover, the Government failed to maintain order and security or to provide a sound currency. Hong Kong (which became a British Colony in 1842) illustrates what might have happened under good government; Hong Kong served as the entrepôt for much of the trade of South China and Hong Kong firms such as Jardine Matheson played a leading part in such development as took place.

It would be a difficult task to make even a rough estimate of the profits which western enterprise made out of China, and our authors do not attempt it. But the figures which they reproduce in Appendix A show that China had an import surplus of £181 million over the period 1882–1931. This needs some explanation, especially as most of the other items in the balance of payments, such as payments for shipping services, must have been debits. Can it be that the " fabulous profits " were somewhat of a myth ? Appendix B estimates foreign investment in China in 1931 at 3,243 million U.S. dollars (of which over a third was British and over a third Japanese). How much are these investments worth to their owners to-day ?

The story of Japan is quite different. The modernisation of the economy was the major aim of public policy since the Restoration of the Imperial Government in 1868. The government encouraged the temporary immigration of foreign technicians and welcomed the introduction of western methods and ideas. The object was to learn as rapidly as possible what the west had to teach so that Japan could take over from her teachers and become a modern industrial nation not dependent on foreign capital or foreign technicians.

One very interesting question, outside the scope of the present volume, is how Japan managed to succeed in this policy, and to raise her output per head so substantially, without any significant investment by foreign capital.

FREDERIC BENHAM.

National Incomes and International Trade. By HANS NEISSER and FRANCO MODIGLIANI. University of Illinois Press, Urbana, Ill. 1953. xviii + 396 pp. $7.50.

This weighty volume presents the results of ten years' intensive econometric research into the structure of the world economy in the inter-war period. Its backbone is a system of thirty-six equations, expressing the import and export demands for food, raw materials, and manufactured goods of six groups of countries—the United Kingdom, the United States, Germany, France, seven other industrial countries, and the primary countries (excluding Russia). The main exogenous variable employed is real income, except for the primary countries, where export earnings plus industrial output is used; this treatment of the primary countries reflects Professor Neisser's original hypothesis that fluctuations in the real income of industrial countries were the chief cause of short-run changes in trade in the period. Other exogenous variables used in some equations are relative prices, domestic food production, and the capital imports of the primary countries.

The equations are presented in Part I, which is devoted to theoretical problems. Part II analyses the influence of the exogenous variables on trade volumes, with the aid of some ingenious tables; the authors find the influence of prices to be generally small, though they are careful to emphasise qualifications to this result. Part III analyses the relative decline in international trade during the 1930's, and Part IV discusses the estimation of the basic coefficients. The book concludes with an unnecessary defence of the macro-economic approach in international trade theory, and suggestions for an expanded model. Detailed technical notes on sources and methods are appended.

The book is distinguished by its effort to construct and solve a genuinely interdependent model of the world economy, by the ingenuity with which a host of minor problems have been handled, and by the scrupulous way in which the authors inform the reader of the difficulties and limitations of their approach. But continual compromises have been required by the short-comings of the data and by estimation and computation difficulties, and the single-equation multiple-correlation technique employed is open to many objections. The authors recognise these, though they feel that deficiencies of data are a more serious source of error; but one may still feel a reasonable doubt as to the legitimacy of their procedure of testing such equations against selected years in the short period from which they have been derived. A more general doubt is suggested by the authors' insistence that their model postulates a constant world economic structure, and that their equations are inapplicable to later years—does information of such limited usefulness and doubtful reliability justify the ten years' hard labour required to produce it ?

HARRY G. JOHNSON.

Colonial Monetary Conditions. By IDA GREAVES. H.M.S.O. 1953. v + 95 pp. 5s. net.

In recent years increased interest has been taken in colonial monetary institutions and proposals to introduce central banks have been made in both the Gold Coast and Nigeria. This study, which is published as No. 10 in the series of Colonial Research Studies and is based upon research financed by a grant from Colonial Development and Welfare Funds, is therefore to be welcomed particularly since, as Dr. Greaves points out (p. 1), " writers about the colonies have omitted the subject of money and writers about money have ignored the colonies ".

There are two general methods of approaching the subject of colonial monetary systems. The first consists in treating the colonies problems as essentially similar to those of other economically underdeveloped territories.

This involves thinking of colonies as (potential) independent states with economies distinct from, though in varying degrees dependent upon, the economy of the United Kingdom. The alternative is to follow Mill and to regard colonies administratively as separate entities but economically as parts of the United Kingdom economy. The choice of approach is important since it tends to determine the emphasis given to differing aspects of the subject. In present conditions when many colonies are moving towards political independence and most are preoccupied by the problems of economic development there is much to be said for the first approach. Dr. Greaves, however, if I interpret her correctly, regards it as a "Balkan-minded treatment, mistaken in principle and misleading for purposes of practical policy" (p. 2). Her sympathies are with Mill and this enables her to give full emphasis to the very close integration which exists between colonial currency and banking institutions and the monetary system of the United Kingdom. This, indeed, is the main theme of her work.

In chapters 1–3 Dr. Greaves provides a general survey of colonial monetary institutions. This is admirably written, concise and informative. In her later chapters she illustrates the operations of these institutions by reference to particular territories in West Africa and the West Indies. Chapters 3 and 5 contain a very useful discussion of banking in these territories and bring out clearly not only the fundamental rôle of the banks in the monetary system but also the limited scope of their lending operations, their special concern with external trade, their reliance on transfer charges for income (particularly in West Africa), their close and intimate relationship with the London money market, and the benefits with which they have provided the colonies. These chapters alone render Dr. Greaves' study well worth while. There are, however, some omissions. The problems of providing bank finance for the internal market (which are certainly important in West Africa) are touched upon only briefly (footnotes on p. 57 and 64). There is no mention of criticisms of the banks by indigenous businessmen (which are of long standing in West Africa and not wholly without substance), while the criterion suggested for judging the operations of colonial banks, whether they "make credit available to local businessmen as readily as it is available to firms in Manchester or Montreal who want to do business in the colony" (p. 47), is plainly related to the needs of expatriate and not indigenous enterprise and is probably not the relevant criterion for future development.

In Chapter 8 Dr. Greaves shows that, in addition to their dependence on the London money market through their commercial banks, colonial territories are intimately connected with the London capital market through colonial government finance. This is an interesting chapter which touches briefly upon the operations of the Joint Colonial Fund about which very little has been written. In it Dr. Greaves makes plain the advantages derived by the colonies from their easy access to London funds. But are there not some disadvantages? One consequence of the ready access to London has been lack of interest in developing local security markets. This may be harmful. Dr. Greaves does not discuss this possibility. Moreover she writes (p. 83) that "the alternative to being an overseas part of the London money market is that each colonial territory finds its capital market in its own borders and its own resources", which may suggest to some readers that attempts to develop local markets require abandonment of the London connection—which is surely not the case.

In her introduction Dr. Greaves throws doubt upon the wisdom of applying the concepts of modern monetary theory to the analysis of colonial economics (p. 2). In general, she has followed her own precepts and this may be one reason for the lack of clarity in her discussion of the factors determining changes in colonial money supplies. Her general conclusion (p. 84) that the level of colonial prices and money incomes determines local credit and currency and not credit and currency the level of prices and money incomes is valid for the territories she examines. It is, however, stated in a way which might lead the unwary reader to suppose that it was a necessary consequence of a monetary system consisting in a currency board and branches of British colonial banks. An examination of Southern Rhodesian experience is sufficient to show that this is not the case and to establish that changes in colonial money supplies may influence domestic incomes and prices.

In her final chapter Dr. Greaves discusses a number of possible modifications which might be made to existing colonial monetary arrangements, including alterations of the rate of exchange on sterling (p. 84), the introduction of a fiduciary element in colonial currency supplies (pp. 85-86) and the establishment of central banks. Her treatment of these questions is unavoidably brief and general.

On page 65 the Bank of England (by implication) is called a " leader of last resort ", a piece of irony which should probably be attributed to the printers rather than the author, and on page 43 the sentence discussing the relationship between real estate as collateral and personal loans seems to have become confused. These, however, are minor errors of no consequence.

In sum, Dr. Greaves has written a book which is always informative, frequently stimulating, and occasionally provocative. The descriptive chapters are particularly admirable and alone would justify the book's recommendation. With these facts recorded in its favour it is, perhaps, permissible to suggest that the book might have been better still if Dr. Greaves had eliminated the polemics on pages 61-65 in favour of further elaboration of her own arguments which, as they stand, do not make the points in dispute between herself and other writers clear to the reader, and permitted herself on occasions to be a trifle more " Balkan-minded " in her treatment of colonial banking.

DAVID ROWAN.

Management Succession in Small and Growing Enterprises. By C. R. CHRISTENSEN. Harvard Business School, Boston. 1953. xi + 217 pp. $3.25.

Mr. " Butskell " must have concluded that small to medium-sized businesses are a valuable element in the British economy, and in the last Budget steps were taken to render the death of the proprietor less devastating in so far as death duties are concerned. But what if the proprietor himself refuses to face the problem of succession in top management ? The consequences can be even more devastating than the activities of the Commissioners of Inland Revenue.

Indeed the present reviewer received his technical training in just such an establishment. A weaver and his brother, by dint of extraordinary hard work and abstinence, built a mill by night and at weekends, much of it with their own hands. One brother died but the other lived to a considerable age leaving £120,000 and a very fine business to his daughter and his employees.

(This was many years before the sinister 1948 Finance Act.) Yet in a few years they were bankrupt and the business disappeared.

This very real problem of management succession in a critical sector of any economy, let alone the British, is most vividly discussed by Professor Christensen of the Harvard Graduate School of Business Administration. He is to be congratulated on having made a problem which is essentially connected with people—tough, masterful, prejudiced people—human and alive. The American technique of case histories is seen at its best. One of his cases remarks: " My banker has suggested that I bring along a potential successor. In effect he is asking me to supply the plank and then walk it ! ". Innumerable other characters walk his pages, each with his quirk, each denying, fumbling over or resolving the problem of what is to happen to the management of his business when he, its creator, is no more.

If one is starchy a discussion of " Family Feuds " or " Developing the Boss's Son " may seem out of place in a study of Business Administration, but, oh, how real and painful are these problems in any business employing up to 500 people and how wrong we are in this country to scoff at the approach of Emily Post to Etiquette, or would be if we did not take Professor Christensen very seriously !

NEVILLE BROWN.

Britain, the Sterling Area and Europe. By F. V. MEYER. Bowes & Bowes, Cambridge. 1952. viii + 150 pp. 21s.

This book is comprised of three parts: a short introductory chapter on extensive and intensive ways of increasing economic output, a chapter on the Sterling Area, and a chapter on Western Union. The chapter on the Sterling Area gives a brief history and analysis. Among other things there is a discussion of the working of the system during trade cycles, where it is found that the United Kingdom is the gainer from the Sterling Area system in times of slump, while the primary producers stand to gain in times of boom. There is also an interesting attempt to sort out the gainers and losers in the post-war years.

The chapter on Western Europe is concerned with customs unions and the European Payments Union. Like the others, this chapter is not merely theoretical but applies analytical tools to the empirical data in order to try to arrive at answers to real questions. The author concludes (pp. 132–133): " On economic grounds there is nothing incompatible between the sterling area and intensification of Britain's economic alliance with continental Western Europe. Britain needs both and is equally needed by her partners in either union . . . The aims of economic policy are economic stability and economic strength. The best means to these ends in external economic policy lie in a strengthening of the links between the United Kingdom and both the rest of the Sterling Area and Western Europe to whatever extent is politically feasible ". This conclusion is so broadly framed that—especially if we add North America to the list of countries with which Britain should strengthen her economic links—most people would concur in it. The difficulty arises rather in choosing between alternative links in a world of regional alliances. The author studies this matter earlier on in the chapter, but one does not emerge with a very clear understanding of the problem; and some of the theoretical analysis appears to the reviewer to be unconvincing, particularly those arguments deriving from the widely quoted idea that a customs union will bring most benefit if it is formed between " competitive economies ". The whole question of optimal regional grouping, as contrasted with a universal or world trade system, is highly complex both in theory and in practice and certainly merits study.

H. Makower.

An Introduction To Trade Unionism. By G. D. H. Cole. George Allen & Unwin. 1953. 324 pp. 18s.

This introduction to trade unionism is by the historical route; a route which in many respects provides the best approach to the subject. However, in a relatively short book such as this, the space devoted to history is at the expense of a more thorough discussion of many important issues which face the trade union movement today. For instance, while remembering that Professor Cole was limiting his book to an introduction, it does seem a pity that in his chapter, Trade Unions and the Law, there is no mention at all of the growing number of expulsion cases and the perceptible shifting of the attitude of the Courts towards the legal character of trade unions. Consideration might have been given to the extremely important case of Lee v. Showmen's Guild of Great Britain (1952) 2 A.B. 329, which in some respects is perhaps the most important trade union case since Taff Vale. Again, in the chapter on Trade Unions and Politics much that is important in the relationship between the unions and the Labour Party is hinted at, but the discussion is confined almost entirely to a formal analysis of the place of the unions in the Party structure.

The author's discussion of the problem of membership participation and the government of the unions is one of the best sections of the book. However, the statement that miners' lodges " are apt to be much more lively and better attended and to play a much more important part in the discussion of matters of policy " than branches in other unions, is not backed up by any evidence. From the investigations made by the reviewer it would appear to be erroneous. Indeed, compared with many unions the attendance figures at miners' lodge meetings are low and there is equally as much minority government in the miners' union as in many others.

Another criticism is that the book shows evidence of having been written in a hurry and the chart of trade union structure is almost incomprehensible. On the other hand, the author has supplied a valuable series of appendices containing a variety of important trade union statistics.

In the stimulating final chapter, which discusses the place of trade unions in the modern world, Professor Cole confesses that he is still an unrepentant Guild Socialist. At the same time he makes a powerful case for the continuation of independent trade unions and states that his undiminished belief in the virtue of " workers' control " does not lead him to the view that this control is best exercised by trade union participation in management. " Trade unions are essentially bodies which exist to protect their members against exploitation and injustice—not to become the employers of those whom they are under an obligation to protect ".

Though Professor Cole states there is no good reason why the problems which would arise should not be satisfactorily solved, it is difficult to understand how " workers' control " and strong trade unionism would work together. Either the unions would become the controlling body—which

Professor Cole is against—or their functions would be redundant because the management would be directly responsible to the workers who elected it. Thus, if unions existed under " workers' control ", there would inevitably be a confusion of authority. There is no real analogy between joint consultation and " workers' control " as Professor Cole suggests. In so far as joint consultation works it does so because the workers are not directly responsible for the decisions of management. This is not to say that workers have no responsibility to co-operate with management and that their views should not be fully taken into account when decisions are being made. To imply that in the absence of capitalism, that is, under socialism, this kind of problem would be more easily solved is not really an answer to the objections that are raised against " workers' control ".

In spite of these points this book will be of great value to a wide public. If read by trade unionists, it should help them to examine their problems in a realistic manner and encourage them to face their obligations in the world of today.

B. C. ROBERTS.

The Federal Reserve System, 1945–49. By J. S. FFORDE. Oxford University Press. 1954. ix + 351 pp. 35s.

American monetary experience since 1945 is a matter of absorbing technical and theoretical interest. The United States was the first major country to revive monetary policy from the purely passive rôle into which it had fallen during the war, yet the Federal Reserve System worked under peculiar difficulties. The central problem was to regain effective control over the supply of commercial credit while " maintaining orderly conditions in the market for government securities ". This phrase was interpreted (until 1951) as implying an obligation on the part of the System to support the prices of long-term government bonds on a 2½ per cent. basis. To anyone brought up on orthodox central-banking theory, the problem might appear almost insoluble, especially when one adds that, during most of the time, the System and the Treasury were in by no means complete agreement. However, the Federal Reserve authorities have displayed great technical ingenuity and, as Mr. Fforde shows, have achieved a considerable measure of success.

It is difficult for an outsider, especially one from a foreign country, to write a detailed study of central-banking operations, and Mr. Fforde's book is a very real achievement. He tells the story in very great detail, with admirable clarity and, so far as I can judge, accurately. If one adds that some of the material does not appear to have been quite fully digested, and that there are a few signs of hasty writing, these are only very slight criticisms.

My one major disagreement with the author concerns the relationship between his theory and his history. At the beginning of his last chapter, Mr. Fforde speaks rather slightingly of central-banking theory (" Theory is either rough and ready or else a series of endlessly complicated permutations, which are better replaced by history ") and then goes on, himself, to give a most interesting theoretical analysis of the achievements and limitations of Federal Reserve policy. One wishes that this analysis had come earlier and had been used more in the presentation of the facts. From a historical point of view, there may be much to be said for letting the facts speak for themselves, but a great multitude of facts are very hard to interpret, unless one has a set of theoretical hypotheses to which one can relate them. However, this is a matter on which opinions may well differ, and it does not alter the fact that Mr. Fforde has done a very useful job. The American monetary experiments since the war deserve close study by British economists and bankers, and Mr. Fforde's book will form an essential part of the literature of the subject.

E. VICTOR MORGAN.

The Crofting Problem. By ADAM COLLIER. Cambridge University Press. 1953. xiv + 191 pp. 25s.

The North and West of Scotland is one of the most sparsely populated areas in Britain, yet its traditional problem is one of over-population. The seven Highland Counties together comprise almost 50 per cent. of the surface area of Scotland, but contain less than 8 per cent. of the cultivated land, and much of this is marginal. The typical holding is a small unit or ' croft ', from 2 to 20 acres in size, which provides a home, but not, in most cases, sufficient income in cash or kind to maintain the crofter and his family even at their own modest standards. These are the main ingredients of what is usually called " the Highland Problem ". Complicating factors are inaccessibility, lack of attractive opportunities for investment, the decline of the fishing industry, and the individualism of the Highlander.

During the last seventy years a number of commissions and committees have reported on various aspects of this problem, and several *ad hoc* authorities have been created to deal with it. This book would have been useful enough had it only related the work of these bodies to the historical and economic background of crofting. It does more than this, however. In an illuminating analysis of Highland development, it shows that the failure of State action to secure a lasting solution was largely due to lack of a comprehensive and constructive policy, and to insufficient effort to obtain the co-operation of the Highlanders themselves.

A few criticisms can be made : references to the seasonal migration associated with fishing are somewhat cursory; the interesting estimates of regional income make insufficient distinction between pure guesswork and what is based on collected information; and some proposed measures seem optimistic in view of their probable cost, e.g. the provision of shelter-belts in the very exposed Outer Isles. Such minor faults, however, are outweighed by the well balanced outlook of the author. If Adam Collier had not died in 1945 he would undoubtedly have had much to contribute to the solution of the crofting problem.

H. C. MACKENZIE.

The Genesis of Modern British Town Planning. By WILLIAM ASHWORTH. Routledge & Kegan Paul Ltd. 1954. 259 pp. 21s.

This is a useful and readable history of the growth of towns in the nineteenth century, the unsuccessful attempts to mitigate their horrors, the emergence in the twentieth century of a town planning movement and the passing of the 1947 Act. In the first part the processes of town growth are described with their resultant evils, and the reasons for the failure to deal with them. There is a useful description of a number of well planned Victorian towns, showing how eighteenth century ideas survived, largely by the seaside. In general, we miss any statement of the eighteenth century background, and thus the evils of the new towns appear blacker than perhaps they should, and figures of house building would have usefully complemented the population figures. We then turn to three ways in which the problem was tackled, central improvements, the creation of model towns, and the growth of suburbs. This documents in a fascinating way the inadequacies of the attempted solutions; the history of the 'New Towns' idea is particularly valuable. Administrative failure and the problem of land values are clearly shown to be crucial difficulties. But more far-reaching was the relationship between work-places and living-places, in its effects both on central areas and suburban expansion. Dr. Ashworth gives many illustrations of this, but perhaps never clearly sketches the problem.

Finally we have a graphic description of the history of town planning from the 1909 to the 1947 Act. We see the high hopes attached to the earlier Act and its practical futility; the swamping of the ideas of Ebenezer Howard and Geddes in the architects' enthusiasm for suburbia, the disastrous influence being that of Raymond Unwin (the earlier Unwin, not the Unwin of the Greater London Regional Planning Committee); and the late action taken to deal with the fundamental problems of location of industry. Does not serious blame attach to the failure of economists to analyse the economic losses involved in unplanned development? Town planners could hardly be blamed, when economists, even up to 1939, tended to assume that control over location of industry was unnecessary, and even positively harmful. Teamwork in these "fundamental problems of social life" (p. 229) still remains essential. Dr. Ashworth has done a valuable work in charting the past history of the problem, and showing how much is still to be done. Perhaps the main weakness of the book is, strangely enough, to be found in its handling of London. There is, for example, no mention of Dorothy George, the Booth Survey, its successor, or W. A. Robson.

D. L. MUNBY.

SHORTER NOTICES

Transport and the State of Trade in Britain. By THOR HULTGREN. Occasional Paper No. 40. National Bureau of Economic Research Inc., New York. 1953. xii + 114 pp. $1.50. 12s.

In 1948 the National Bureau of Economic Research (U.S.A.) published a substantial work entitled *American Transportation in Prosperity and Depression* in which Mr. Hultgren set forth his conclusions as to what have been the effects of fluctuations in business activity in the United States upon the transport industry. This much shorter volume consists of an attempt to find out whether the experience of Great Britain leads to the same conclusions reached in the case of the U.S.A., in this case attention being confined almost exclusively to the railway industry. On most counts the experience of the two countries were found to be the same. Whilst the main purpose of Mr. Hultgren's studies have been to throw light on industrial fluctuations in general, this work is by no means without significance from a purely transport point of view. It provides a convenient summary of the main financial and operational results of British railways from 1919 to 1952, as well as certain traffic returns back to 1856.

International Economic Papers. (Translations Prepared for the International Economic Association.) No. 3. Edited by A. T. PEACOCK, R. TURVEY, E. HENDERSON. Macmillan. 1953. 255 pp. 15s.

The main item in this issue of I.E.P. is an English translation of Spiethoff's famous essay on *Business Cycles* (*Krisen*, 1923). While the outline of his analysis is well known, the historical sections are less familiar. In view of current interest in 18th century fluctuations, particularly deriving from the work of Ashton, Rostow and others, it is unfortunate that Spiethoff's comments on the pre-1822 period have been omitted from this version. As an appropriate companion piece a Wicksell paper on overproduction—an extension of part of his *Lectures*, Vol. II—has been included. The issue also contains a charming exchange of letters between Croce and Pareto concerning basic methodological issues, a valuable article by Palander on " Concepts of the Swedish School ", and essays on " Customs Unions " (Byé), " Under-employment in Underdeveloped Countries " (Navarrete), and " Marxian and Keynesian Dynamics " (Peter).

Economic Planning under Free Enterprise. By HENRY GRAYSON. Public Affairs Press, Washington, D.C. 1954. viii+134 pp.

This short work provides a useful summary of the planning objectives and forecasting techniques used in the United States, United Kingdom, Canada, Sweden and the O.E.E.C. countries. A feature of it is the attempt to relating forecasting techniques to the predominant views on economic theory in the different countries. The chapter on the United Kingdom is brief and to the point, but one surprising omission from the short account of the evolution of forecasting techniques is Keynes's *How to Pay for the War*. Unlike many books on the subject, this one preserves a commendable impartiality.

The Background of Business. By H. V. R. GEARY. Oxford University Press. 1953. 224 pp. 9s. 6d.

Mr. Geary presents a textbook in commerce and business economics, designed to cover the examination requirements in commerce of bodies like the Royal Society of Arts, in the small compass of just over 200 pages. The students for whom it is designed should be grateful to Mr. Geary for his successful attempt to cover a vast field in an interesting way without producing a physically weighty result. There are chapters on the different types of firm and different branches of commercial activity, and on management and organisation, accounting, financial management, and the legal background of business. Short bibliographies are appended to each chapter. The author might consider whether he should not in future editions give his readers some guidance in the use of his bibliographies.

La Pologne. Institut National de la Statistique et des Etudes Economiques, Paris. 1954. viii + 263 pp.

La Pologne is the first volume in the I.N.S.E.E. series, " Memento Economique ", in which the Institute attempts an analysis of the post-war economic development of a country behind the Iron Curtain. The study is based on the information originating in Poland, and the authors may be congratulated on their skill and patience in collecting their statistical data from occasional pronouncements of various officials and party leaders, from their articles in the daily press, in periodicals etc.; the official sources seem to have dried up almost altogether. Owing to these difficulties there are many gaps in the analysis and no attempt is made to give any conclusive comparisons with the conditions before the war. Nonetheless the book is interesting and provides much useful information.

Management of Foreign Manufacturing Subsidiaries. By E. R. BARLOW. Graduate School of Business Administration, Harvard University. 1953. xi + 223 pp. $3.50.

Based largely on a study of the practices and experiences of 17 American firms with branch undertakings in Mexico, this book discusses the problems of managing overseas manufacturing subsidiaries. It begins with a brief and interesting account of some of the features of the Mexican commercial scene as viewed by the businessman accustomed to United States practices and conditions. It then turns to the problems of organisation, direction and supervision of the foreign units, ownership policy, and executive personnel policy. " If one impression stands out above others, it is that a variety of methods have yielded successful results." Though the volume is likely to appeal mainly to students of business administration—and they possibly may like to have more detailed information than is provided—some of the observations and comments of the author are of interest to economists concerned with the problems of economic development in less-developed countries.

Economic Change in America: Readings in the Economic History of the United States. Edited by JOSEPH T. LAMBIE and RICHARD V. CLEMENCE. The Stackpole Company, Harrisburg, Pennsylvania. 1954. 599 pp.

This volume consists of thirty-seven " Readings ", mostly articles which appeared in well known journals between 1903 and 1952. A few explanatory paragraphs, written by the editors, link the different sections of the book. The writings selected cover an extensive field, but at the same time fail to provide a comprehensive treatment of any single topic. A collection of much greater interest to the European reader would have been confined to recent research and would have included articles from sources which are less known and less easily available on this side of the Atlantic. The type is uncomfortably small; there is no index or list of references.

Commodity Trade and Economic Development. UNITED NATIONS. New York. 1953. vii + 102 pp. 5s.

In December 1952 the General Assembly of the United Nations called for a report on practical measures to secure stable prices of primary commodities, equitable relations between these prices and the prices of capital goods and other manufactures, and continuity of economic and social progress in all countries. The five experts entrusted with this task give a careful explanation of the problems and pitfalls attaching to stabilisation schemes. Many different kinds of commodity scheme, actual and projected, are outlined. The most interesting proposal examined is perhaps that for commodity reserve currency schemes (Chapter 6). The main practical measure proposed by the experts is the establishment of an inter-governmental commission to examine suggestions for the future organisation of stabilisation schemes, and to make recommendations to the Economic and Social Council.

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Economics of Dependence (1952-82)

By F. W. Paish and A. T. Peacock

I

During recent years attention has been increasingly directed towards the economic problems expected to arise in this country as a result of the increase which is foreseen over the next thirty years both in the number of elderly people and in their proportion to the population of working age.[1] Assuming a continuation of the falling trend in mortality rates, the number of persons over the present minimum ages for retirement pensions (men 65, women 60) is expected to rise for about another thirty years, from 6·8 Mn. in 1952 to about 9·8 Mn. in 1982 and 1987. Of all persons over retirement age, women at present constitute slightly over two-thirds. The high proportion of women is due partly to their lower retirement age and partly to their greater longevity.

Table I[2]

Population Over Retirement Age (Mn.) (in Great Britain)

	1952		1962		1972		1982	
Men 65+		2·2		2·5		3·1		3·4
Women 60–64	1·3		1·5		1·7		1·6	
65+	3·3	4·6	3·8	5·3	4·4	6·1	4·8	6·4
Total		6·8		7·8		9·2		9·8
Percentage Women ..		67½		68		66½		65

A factor temporarily accentuating the preponderance of women over men of retirement age is the effect of the losses during the first world war on the group now aged 65–75. The proportion of men will fall still further during the next decade, as the 55–65 age group, in which the losses were even heavier, reaches retirement age. Thereafter the proportion of men will recover, reaching a normal level by 1982. These effects appear still more clearly if we look at the distribution of the increases to be expected in each of the next three decades.

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[1] See for instance, W. A. B. Hopkin, " The Economics of an Ageing Population " (*Lloyds Bank Review*, January, 1953), and the *P.E.P.* Broadsheet No. 364. 1954. *Providing for Pensions*.

[2] Based on Projection 14 of the Statistics Committee of the Royal Commission on Population, adjusted for changes to 1952. The same projection has been used as the basis for all other projections used in this article.

During the first decade of the period the total number of persons over retirement age is expected to rise more slowly than in the second decade and the increase will consist mainly of women. In the second decade both the number of men and the total will increase more rapidly, while in the third decade the rise may be expected to slow down, though more rapidly for women than for men.

It is frequently assumed that a substantial part of the increased cost of supporting retired people will be offset by the falling cost of maintaining children. It is true, of course, that the high birth-rates of the immediate post-war years were due largely to temporary causes and could not have been expected to continue; but it also seems very possible that, in view of the changed proportions of the numbers of the sexes of marriageable age and under conditions of full employment, the birth-rate will be maintained at a level well above that thought likely a few years ago. In any case, it would be wise to allow for this possibility in any assessment of the future cost of maintaining the dependent population, and to assume that the relief from this source will be less than has sometimes been thought. The following estimates are therefore based on a fertility rate of 5 per cent. above the 1935–38 level, which is one of the higher of the various assumptions employed by the Statistics Committee of the Royal Commission on Population in making their different projections. This assumption gives the following results:

TABLE II

CHANGES IN POPULATION OVER RETIREMENT AGE IN GREAT BRITAIN. (MN.)

	1952–62	1962–72	1972–82	Total
Men 65+	+0·24	+0·60	+0·35	+1·19
Women 60+	+0·72	+0·76	+0·32	+1·80
Total	+0·96	+1·36	+0·67	+2·99
Percentage Men ..	25	44	52	40

TABLE III

CHILDREN IN GREAT BRITAIN (MN.)

	1952			1962			1972			1982		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
0–4 ..	2·0	1·9	3·9	1·8	1·7	3·5	1·8	1·7	3·5	1·9	1·8	3·7
5–9 ..	2·0	1·9	3·9	1·8	1·7	3·5	1·7	1·6	3·3	1·8	1·7	3·5
10–14 ..	1·7	1·6	3·3	1·9	1·9	3·8	1·7	1·7	3·4	1·8	1·7	3·5
Total ..	5·7	5·4	11·1	5·5	5·3	10·8	5·2	5·0	10·2	5·5	5·2	10·7

On this projection, the number of children under 15 would fall by nearly a million during the next two decades and then recover partially for a time as the children born during the immediate post-war years came of marriageable age. The fall would take place entirely in the younger children; the number in the 10–14 age group, who cost more to maintain and educate, would never fall below the 1952 level.

Meanwhile, on the same assumptions and with the additional one of a net emigration of 50,000 a year (which seems realistic in the light of recent experience), the number of persons of working age can be expected to remain unchanged during the next two decades, with a fall of nearly 1 Mn. in the third.

We can now get a picture of the results of our assumptions on the changes to be expected in the proportion of those outside the normal working ages to those within them:

TABLE IV

POPULATION OF GREAT BRITAIN INSIDE AND OUTSIDE WORKING AGES (MN.)

	1952			1962			1972			1982		
	M	F	T	M	F	T	M	F	T	M	F	T
Outside Working Age												
Under Working Age	5·7	5·4	11·1	5·5	5·3	10·8	5·2	4·9	10·1	5·5	5·2	10·7
Over Working Age	2·2	4·6	6·8	2·5	5·3	7·8	3·1	6·1	9·2	3·4	6·4	9·8
Total outside working age.	7·9	10·0	17·9	8·0	10·6	18·6	8·3	11·0	19·3	8·9	11·6	20·5
Inside Working Age	16·0	15·5	31·5	16·3	15·2	31·6	16·3	14·8	31·1	15·9	14·3	30·2
Total Population	23·9	25·5	49·4	24·3	25·8	50·2	24·6	25·8	50·4	24·8	25·9	50·7
Population outside Working Age as percentage of Population inside Working Age	49	64½	57	49	70	59	51	74	62	56	81	68
Index	100	100	100	100	108	103	104	115	109	114	126	119

It is clear from Table IV that, on our assumptions, the rise in the size of the population over retirement age would be offset only to a small extent by the fall in the number of children, and that the ratio of the population outside working age to that of working age would rise very substantially over the next thirty years, especially in women, with the sharpest rise between 1972 and 1982, when the effects of the recovery in the birth-rate reinforce the still rising number of people over retirement age.

While these figures give some idea of the size of the problem, they are not yet sufficient to enable us to make definite estimates of the actual number of dependants or of the actual size of the working population which will have to support them; for persons over retirement age are not identical with retired persons, nor are persons of working age identical with persons working.

The most obvious inadequacy of figures showing merely the size of the population over retirement age relates to married women. British provisions for retirement pensions assume (probably correctly) that married women never retire. On the other hand, a married man whose wife does not go out to work is entitled to a higher pension on retirement than an unmarried man. If her husband is under 65, no pension is payable in respect of a married woman,[1] even though she herself is aged 80; while if her husband is over 65, he draws an additional pension on her account whatever her age, though if she is under 60 this is called an "adult dependant's allowance". To ascertain the number of married women eligible for pension it is, therefore, necessary to ascertain the number of married men aged 65 and over, and for this we need a projection of the population, not merely by age and sex, but also by marital condition.

Another reason why we should like to know the expected marital condition of the population is that the proportion of women going out to work depends largely on their marital status. The 1951 1 per cent. sample indicates that over 80 per cent. of single women of working age go out to work, as compared with less than 25 per cent. of married women and about 50 per cent. of widows. If, therefore, we can subdivide each age group into these three categories we can make a much closer estimate of the number of women likely to be going out to work in the future. A third, though less important, reason is that widows who do not go out to work are entitled to pensions, at the same rate as for retirement pensions, on reaching the age of 50.

It was hoped that it would be possible to use for these purposes some existing projection of the population by marital condition. Unfortunately, enquiry at the Government Actuary's Office has revealed the fact that no such projection has been made, and we have therefore been driven to attempt to construct one for ourselves. It is hoped that this, crude and arbitrary as it necessarily is, will not prove so misleading as to be worse than none and that it may serve to indicate at least the broad trends that may reasonably be expected.

The projection is based on four simplified assumptions:

1. That 90 per cent. of all women born after about 1927 will marry at some time during their lives. This proportion is much higher than that ruling during recent decades, but seems to be rendered plausible by the newly developed excess of men during the marriageable ages and by the assumption of a continued high level of employment.
2. That men continue to marry women who are on the average 2½ years younger than themselves;

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[1] Though the very small number of married women who have remained in regular work may qualify for pensions in their own right.

3. That mortality rates do not vary with marital status; and
4. That the number of married men in the total (not, of course, the resident) population is identical with the number of married women.

The 1952 figures themselves involve a measure of estimation, for the only available statistics for the division of the population by marital status are those published in the 1 per cent. sample of the 1951 Census, which not only refer to 1951 instead of 1952, but also cover only the resident population, while here we have to deal with the total population, including those (mainly in the armed forces) who are temporarily abroad. For subsequent years the plausibility of the projection naturally diminishes cumulatively with time.

TABLE V

POPULATION OF GREAT BRITAIN BY MARITAL STATUS (MN.)

	1952		1962		1972		1982	
MEN	Married	Other	Married	Other	Married	Other	Married	Other
0–14 15–65 65+	— 10·8 1·4	5·7 5·2 0·8	— 10·6 1·6	5·5 5·7 0·9	— 10·7 2·0	5·2 5·6 1·1	— 10·4 2·3	5·5 5·5 1·1
Total ..	12·2	11·7	12·2	12·1	12·7	11·9	12·7	12·1

	1952			1962			1972			1982		
WOMEN	Single	Married	Widows	Single	Married	Widows	Single	Married	Widows	Single	Married	Widows
0–14 15–60 60+	5·4 4·3 0·8	— 10·4 1·8	— 0·8 2·0	5·3 4·3 0·8	— 10·1 2·1	— 0·8 2·4	5·0 4·0 0·9	— 10·0 2·7	— 0·8 2·5	5·2 3·8 0·8	— 9·9 2·8	— 0·6 2·8
Total ..	10·5	12·2	2·8	10·4	12·2	3·2	9·9	12·7	3·3	9·8	12·7	3·4

On the basis of this projection, it would appear that the number of married men over 65 can be expected to rise by some 900,000, or nearly 65 per cent., between 1952 and 1982, single men and widowers over 65 by 300,000, or 40 per cent., and widows over 60 by 800,000, or 40 per cent. The number of single women over 60 is unlikely to show much change. The implications of these figures on the cost of retirement pensions are shown in Table XI on p. 291.

The split by marital groups also enables us to make an estimate of the number of women likely to be going out to work in future years. Applying the 1951 proportions to later years by age and marital groups, we obtain the estimates of the working and non-working population which are summarised in Table VI. The full projection is shown in the Appendix.

There can be little doubt that this table, showing very little increase in the proportion of non-workers to workers during the next twenty years, gives too favourable an impression of the probable increase of the burden on the community. This is partly because it includes among " non-workers " all married women, whether their husbands are retired or not; if we exclude from among the dependants all married women whose husbands are still working, we find that the proportionate increase in the number of non-workers per hundred workers is nearly twice as great. Another reason is that it includes as equal all dependants, whatever their age, and all workers, whatever their age and sex. In fact the cost of maintaining a young child must be considerably less than that of maintaining and educating an older child or of maintaining an adult, so that the expected reduction in the number of children under 10 would not make up for an equal increase in the number of older dependants. In Table VII we make a rough adjustment for differences in the cost of maintenance, giving children under 5 a weight of 1, from 5 to 10 of 2, from 10 to 15 of 2½, and children over 15 and adults a weight of 3. Married couples are given a joint weight of 5. If we care to regard these weights as the equivalent of pounds sterling per week, the weighted totals give us a figure for the weekly cost of maintenance, and by multiplying by 52 we get an estimate of the annual cost. Women married to working husbands are excluded.

TABLE VI

WORKING AND NON-WORKING POPULATION OF GREAT BRITAIN (MN.)

	1952		1962		1972		1982	
	Working	Non-Working	Working	Non-Working	Working	Non-Working	Working	Non-Working
MEN								
0–14	—	5·7	—	5·5	—	5·2	—	5·5
15–64	15·3	0·7	15·5	0·8	15·5	0·8	15·1	0·8
65+	0·7	1·5	0·8	1·7	1·0	2·1	1·0	2·4
Total Men ..	16·0	7·9	16·3	8·0	16·5	8·1	16·1	8·7
WOMEN								
0–14	—	5·4	—	5·3	—	5·0	—	5·2
15–59	6·5	9·0	6·4	8·8	6·1	8·7	5·9	8·4
60+	0·4	4·2	0·4	4·9	0·5	5·6	0·4	6·0
Total Women	6·9	18·6	6·8	19·0	6·6	19·3	6·3	19·6
Total Population	22·9	26·5	23·1	27·0	23·1	27·4	22·4	28.3
Non-working Population as Percentage of Working Population ..		116		117		118½		126
Index ..		100		101		102		108½

To complete the adjustment, we need to translate the actual working population expected at the various dates into terms of the equivalent number of adult males. To do this we shall weight the number of women and juveniles at work in proportion to their relative earnings in 1953 (women: 0·54 of a man of working age; boys under 21: 0·42; girls under 18: 0·35) and the number of men working after the age of 65 by the arbitrary figure of 0·75. The results of this calculation are shown in Table VIII.

TABLE VII

NUMBERS AND MAINTENANCE COST OF DEPENDENT POPULATION (MN.)

CHILDREN	1952			1962			1972			1982		
	No.	Wt.	Wkly. Cost	No.	Wt.	Wkly. Cost	No.	Wt.	Wkly. Cost	No.	Wt.	Wkly. Cost
0–4	3·9	1	3·9	3·5	1	3·5	3·5	1	3·5	3·7	1	3·7
5–9	3·9	2	7·8	3·5	2	7·0	3·3	2	6·6	3·5	2	7·0
10–14	3·3	2½	8·2	3·8	2½	9·5	3·4	2½	8·5	3·5	2½	8·7
Total Children		..	19·9			20·0			18·6			19·4
Single Men ..	0·9	3	2·7	1·1	3	3·3	1·2	3	3·6	1·3	3	3·9
Single Women	1·3	3	3·9	1·4	3	4·2	1·4	3	4·2	1·3	3	3·9
Widows ..	2·2	3	6·6	2·6	3	7·2	2·7	3	8·1	2·9	3	8·7
Married Couples ..	1·2	5	6·0	1·3	5	6·5	1·6	5	8·0	1·8	5	9·0
Total Adults ..			19·2			21·2			23·9			25·5
Total Weekly Cost			39·1			41·2			42·5			44·9
Total Annual Cost			2030			2140			2210			2330
Index of Cost ..			100			105½			109			115

TABLE VIII

WORKING POPULATION OF GREAT BRITAIN IN TERMS OF EQUIVALENT NUMBER OF MEN OF WORKING AGE (MN.)

	1952		1962		1972		1982	
	Actual	Equiv.	Actual	Equiv.	Actual	Equiv.	Actual	Equiv.
Boys 15–20 (×0.42) ..	1·5	0·6	1·7	0·7	1·7	0·7	1·6	0·6
Girls 15–17 (×0·35) ..	0·6	0·2	0·7	0·2	0·7	0·2	0·6	0·2
Women 18+ (×0·54) ..	6·3	3·4	6·2	3·4	5·9	3·2	5·7	3·1
MEN 65+ (×0·75) ..	0·7	0·5	0·8	0·6	1·0	0·7	1·1	0·8
18–65 (×1.00)	13·8	13·8	13·8	13·8	13·8	13·8	13·5	13·5
Total	22·9	18·5	23·2	18·7	23·1	18·6	22·5	18·2
Index ..	100	100	101	101	101	100½	98	98½

Whether we take the crude or adjusted figures, the changes in the size of the working population over the next thirty years seem likely to be small. The close identity of the adjusted with the crude index is due to the fact that the increase in the number of men relatively to women workers is offset by the rise in the proportion of men over retirement age.

In Table IX we combine the results of Tables VII and VIII to give an indication of the cost of maintaining dependants per equivalent adult male.

TABLE IX

WEIGHTED COST OF MAINTAINING NON-WORKING POPULATION PER EQUIVALENT ADULT MALE WORKER

	1952	1962	1972	1982
Annual Cost (£Mn.) ..	2030	2140	2210	2330
Equivalent Adult Male Workers (Mn.)	18·5	18·7	18·6	18·2
Cost per Worker ..	£110	£114	£119	£128
Index	100	103½	108	116

In so far as these figures can be regarded as having significance, they indicate that the cost of educating and maintaining the non-working population (excluding wives of working husbands) at constant cost per head will rise by an average of about ½ per cent. per annum for the next thirty years. This rate of increase is considerably less than the average of ¾ per cent. per annum by which output per head of working population has risen during the past forty years and still less than the rate at which it may be hoped to continue to increase in the future. Thus the increase in the burden per worker of supporting non-workers due merely to the change in the age distribution of the population would (in the absence of a severe worsening of the terms of trade) be substantially less than the increase in real income, so that if the standard of living of non-workers remained as at present, the share of the total national income going to them would fall in spite of the increase in their numbers. Any serious problems which may arise on the financing of the support of non-workers will therefore be attributable, not to the mere change in the age distribution of the population, but to increases in the cost of education and maintenance per head of the non-working population and/or to shifts in the responsibility for financing this expenditure, especially in the direction of the state.

It must be emphasised that this conclusion depends upon the assumption that the same proportion of the population as in 1952 will continue to work on after retiring age. Changes in this proportion would have a considerable effect on the calculation. If, for instance, the increase in eligibility for retirement pensions were to cause the number of men over 65 and of women over 60 remaining at work to fall by 25 per cent.

of the estimates shown in Table VI, the estimated cost per equivalent adult male worker of maintaining the dependent population would rise in 1982 from £128 to £133 a year and the percentage increase over 1952 from 116 to 121, giving an average annual increase over 1952 of nearly ¾ per cent. If, on the other hand, it was found possible to induce half of those assumed to have retired during the first five years after retirement age to remain at work until the end of the five years, the cost per worker in 1982 would be only £120 per annum, the index only 109 per cent. of 1952, and the average annual increase little more than ¼ per cent.

II. Age Structure and the Social Services

In order to answer the question implied in the last paragraphs, namely, how far the needs of the non-working population are likely to be met by state provision, it is necessary to examine the claims which are exercised by the different age-groups on those state services which are designed to protect minimum standards of living, i.e., the social services. Given the standards of service provided and the level of efficiency in their production, then what might be called the " natural rate of growth " in the social services will depend on population trends.[1]

We begin by examining the present position, and even at this stage a considerable amount of guess-work is required. There are obvious cases where there will not be much dispute about a broad allocation of expenditure according to the age categories employed in Part I, particularly in the case of education, which largely benefits those in the lowest age-group, and of pensions, which benefit retired persons; but difficult problems arise in the case of the National Health Service. We now proceed to list the assumptions.

The expenditure on the National Health Service can be divided into two parts—(*a*) hospitals, and (*b*) general medical services (medical, pharmaceutical, dental and ophthalmic services). In the case of hospitals the attempt was made to arrive at a break-down of expenditure by age-group by assuming that the cost of this part of the National Health Service was proportional to the number of persons in each age-group occupying hospital beds. This makes no allowance, of course, for the variation in the cost per patient in each group. There are considerable differences, for instance, between the cost of maintaining the chronic sick and maintaining women in childbirth. As we have not sufficient data to make allowance for this, we can only warn the reader that this particular calculation is an extremely tentative one. Expenditure on medical and pharmaceutical services is based on the information regarding the number of visits and prescriptions per 100 patients in different age-groups.[1] There is an estimate of dental costs per head in different age-groups in the *Report of the Ministry of Health, 1952*, and in its equivalent for Scotland. The small expenditure on supplementary ophthalmic services is allocated according to the proportions suggested by P. G. Gray, in his article, " Who wears Spectacles ? ". (*The Lancet*, September 22, 1951).

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[1] The term " social services " is not self-explanatory. It is usually defined by enumeration, as we find, for example, in the case of the annual account of expenditure on social services in the May number of the *Monthly Digest of Statistics*. We have chosen to confine our analysis to the current expenditure on National Health Service, Education (other than University grants), National Insurance, Family Allowances and National Assistance. There are two reasons for this. The first is that they are the most important services designed to protect minimum living standards. The second is that their expenditure is more readily allocable to age-groups than, say, housing.

In the case of National Insurance, we have again divided expenditure into two parts—(*a*) retirement pensions, and (*b*) other expenditure (mainly unemployment, sickness, and industrial injuries benefits). There is only one difficulty here, and this is to arrive at an estimate of the amounts of unemployment and sickness benefits paid and of assistance provided, in respect of first children who are not covered by the Family Allowance Acts. The amount is not likely to be large, and seems unlikely to exceed £5 mn. Similarly with National Assistance, we have a considerable amount of information about the nature of assistance supplements to insurance benefits which we can relate to age-groups, and Family Allowances present little difficulty.

In the case of Education, certain assumptions need clarification. The *Report of the Ministry of Education for 1952* (Cmd. Paper No. 8835/53) gives us figures of the expenditure by grade of school and a detailed classification of children in each grade of school according to age-groups. From these figures we can distribute between age-groups the expenditure on schools. Expenditure on Further Education, Teachers' Training and University Scholarships can be allocated without fear of contradiction to the age group 15–64. The small remaining expenditure, including medical inspection and recreation facilities, has been allocated on a per capita basis according to the number undergoing instruction in each age-group.

One difficulty prevents us from making a direct comparison between Table VI and the estimates recorded in the following tables. We have been able to allocate expenditure on social services only according to age-group, which is not the same thing as allocating expenditure according to the working and non-working population. Unfortunately, it would be difficult to adjust these figures without much more extensive data and without making further arbitrary assumptions. The only adjustment we have made is to include women between the ages of 60 and 64 in the population over retirement age, as in Tables I and II. However, our estimates are sufficiently striking to make it possible to draw some fairly definite conclusions about the part that the state is likely to play in providing for the dependent population. Finally, it should be mentioned that the totals in Tables X and XI exclude administrative costs for the social services in question.

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[1] See the article by P. G. Gray and Ann Cartwright (*Applied Statistics*, March, 1954). We are grateful to Mr. Brian Abel-Smith for this and a number of other references regarding health service expenditure.

Table X summarises the results for the fiscal year 1952/53. The results are not entirely unexpected, although probably the differences in expenditure per head in each age-group are more marked than we might have been led to expect. Thus the cost per head of these social services for those over working age is twice that for those under working age and nearly four times that for those of working age. Apart from the obvious importance of pension costs as a determining factor in this calculation, an important part is also played by the National Health Service. Our calculation puts the expenditure for this service for those of less than working age at about £5 per head, rising to £8 per head for those of working age and then to over £16 per head for those over working age. Admittedly these figures are rough, but they cannot distort the true picture to any marked degree.

When we consider the expenditure on social services by age-groups for the future, we are faced with a problem of procedure. If we consider it reasonable to project present trends of expenditure, accepting present standards of service and of efficiency, and assuming full employment, then, if we express the social services considered as a function of age, we merely have to take the present expenditure per head for each service and multiply by the projected population in each age-group according to the estimates in Part I. In general terms, this is the basis

Table X

Expenditure on Selected Social Services by Population Inside and Outside Working Age for 1952/53 (£Mn.)

	0/14	15/64 (Women 15–59)	65+ (Women 60+)	Total
National Health Service				
(*a*) Hospitals	31	164	75	270
(*b*) Other	21	94	37	152
National Insurance				
(*a*) Retirement Pensions . .	—	—	314	314
(*b*) Other	5	214	—	219
National Assistance	—	28	48	76
Family Allowances	76	11	—	87
Education	254	70	—	324
Total Expenditure	387	581	474	1442
Population	11·1	31·5	6·8	49·4
Expenditure per Head in each Group	£34·9	£18·4	£69·6	£29·3

of the estimates for the year 1982 at 1952/53 prices given in Table XI. However, we have to take into consideration certain other factors which modify this rather simple technique. First of all we have taken account of the implications of government policy as laid down in Acts of Parliament both before and after the year 1952/53. Under the conditions laid down in the National Insurance Act, 1946, we know that a growing proportion of the aged will become eligible for retirement pensions, especially after 1958, when the scheme will have been in operation for 10 years. Furthermore, we have taken account of the upward revision in the scales of insurance benefits and family allowances laid down in the National Insurance and Family Allowances Act, 1952, which were not fully effective in 1952/53. Another important modification is that we must allow for the fact that the expenditures on different social services are not independent of one another. This is particularly true in the case of insurance and assistance. Presumably increased eligibility for pensions will reduce the cost of assistance, given the present conditions of provision.

Let us now consider the assumptions which follow from this precedure. Hospital and other health services are simply projected on a per capita basis. Retirement pensions (which we consider in more detail below) are assumed to be paid to 95 per cent. of those of pensionable age, a small adjustment being made to allow for those who choose to delay retirement and receive an increased pension for doing so. Retirement trends are assumed to be the same as at present. We have made a simple projection for sickness, unemployment and other benefits, which seems reasonable if we assume full employment conditions, although perhaps we should make some allowance for factors affecting the payment of maternity benefits. As, however, this is a small item, we have not made any adjustment for it. We have assumed that the cost of assistance for those over working age will fall by the (arbitrary) amount of 50 per cent., while other assistance payments will be projected by our simple method. Family allowances payable in respect of all children other than the first are directly related to the trend in population below working age, but we have had to assume that the ratio of first children to the total child population remains constant over the period. Education is projected on a per capita basis, although we have made allowance for the difference of costs in the 0–4 and 5–14 age groups in order to improve the accuracy of the calculation on our assumptions.

Table XI records the projected changes for the year 1982. The total rise in the cost of services is just over £400 mn., giving a per capita rise of over £6 per head. But this rise is very unevenly distributed. Thus while the expenditure per head of those over working age rises by well over 25 per cent., it remains practically stationary for those of working age and rises just over 10 per cent. in the case of those under working age. We should expect a relative rise in total expenditure on those over working age because of the rise in their numbers, but the relative

TABLE XI

EXPENDITURE ON SELECTED SOCIAL SERVICES BY POPULATION INSIDE AND OUTSIDE WORKING AGE FOR 1982 (£MN. AT 1952/53 PRICES)

	0/14	Men 15/64 Women 15/59	Men 65+ Women 60+	Total
National Health Service				
(*a*) Hospitals	30	157	110	297
(*b*) Other	20	90	54	164
National Insurance				
(*a*) Retirement Pensions	—	—	687	687
(*b*) Other	5	205	—	10
National Assistance ..		28	24	52
Family Allowances ..	116	17	—	133
Education	246	55	—	301
Total Expenditure ..	417	552	875	1844
Population (m.)	10·7	30·2	9·8	50·7
Total Expenditure per Head in each Group	£39·0	£18·3	£89·2	£36·4

rise in expenditure per capita is a consequence of the marked effect of the changes in eligibility for pensions. A good deal has been written recently on the pensions problem,[1] and in view of this it might be as well to consider it in more detail.

In Table XII, we attempt to break down the cost of pensions according to age-group and class of pensioners. The break-down for 1952/53 is based on the statistics of the number of pensioners in each category. (*Hansard*, 15th December, 1953, Cols. 44–46.) The 1982 figures and 1952/53 figures at full eligibility are based on the estimates of those of pensionable age according to marital condition in the detailed table in the Appendix. We have assumed 1952/53 retirement trends throughout. We have also included pensions paid to widows in the age-group 50/59, as they are on the same footing as the pensions provided under the other categories.

The first interesting fact which emerges from this break-down is the importance of the change in the conditions of eligibility. Thus with the conditions of eligibility assumed to operate from 1958 onwards, the 1952/53 cost of pensions would be in the region of £500 m. instead of some £330 mn. as at present. We can, therefore, argue that, of the

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[1] See, for instance, Hugh Gaitskell, *Population Trends and the Social Services* (Eleanor Rathbone Memorial Lecture, Liverpool University Press, 1954); the *P.E.P.* Broadsheet cited above; Brian Abel-Smith, *The Reform of Social Security* (Fabian Research Series, No. 161), one of the few writers to stress the eligibility factor; and the Research Committee of the Institute of Actuaries, *The Growth of Pension Rights and their Impact on the National Economy.*

TABLE XII

COST OF RETIREMENT PENSIONS BY SEX AND AGE GROUP (£MN.)

	(a) 1952/53 at 1952/53 Eligibility						(b) 1952/53 at Full Eligibility						(c) 1982					
	50/59	60/64	65/69	70 +	Total	%	50/59	60/64	65/69	70 +	Total	%	50/59	60/64	65/69	70 +	Total	%
I MEN	—	—	33	80	113	34	—	—	52	110	162	32	—	—	80	182	262	36
II WOMEN																		
(a) Own Insurance ..	—	27	47		74	22	—	17	19	31	67	14	—	18	19	44	81	11
(b) Husband's Insurance	—	8	29		37	11	—	18	27	32	77	16	—	28	38	54	120	17
(c) Widows	20	15	75		110	33	33	29	36	93	191	38	33	29	41	154	257	36
(d) Total..	20	50	264		334	100	33	64	134	266	497	100	33	75	178	434	720	100
(e) %	6	14	80		100		7	13	27	53	100		5	10	25	60	100	

rise in pensions from £334 mn. to £720 mn., £163 mn. (the difference between £497 mn. and £334 mn.) represents the eligibility factor and the remaining £223 mn. the age factor; that is to say, 40 per cent. of the increase is brought about by the change in eligibility conditions. This is not to say, however, that had the scheme provided the ultimate level of coverage to-day the net cost to the state would be £163 mn., because it is safe to say that the expenditure on assistance would be lower. Even so, it is doubtful if the extra net cost of providing 95 per cent. coverage would be less than £120 mn.

Two further facts of importance emerge from these summary tables. The first is that nearly two-thirds of the expenditure on pensions goes to women, and that one-third of the total represents payments to widows; and this would appear to hold for the future as well as the present. The proportions alter only relatively slightly over the thirty years in question, and follow very closely the proportions of older persons according to marital condition as projected in Part I. The second fact is that there is a rise in the proportion of expenditure on pensions going to those over 70. Although we have been unable to give a breakdown for the age-groups from 65 upwards for 1952/53, it seems that something like 55 per cent. of total expenditure on pensions accrued to those over 70, and that this percentage will rise to about 60 by 1982. Both these facts have important implications for policy, because, as we shall argue later, they suggest that it would not be easy to modify retirement pensions in such a way as to reduce the cost substantially, for example by raising the retirement age.

We can obtain at least a partial answer to the questions raised at the end of Part I by comparing the index of the cost per worker of maintaining the non-working population with the index of the cost per worker of the claims on the state exercised by those of above and below working age. As we know, the non-working population is not identical with the population above and below working age, so that any comparison must allow for this. The comparison can, however, hardly be obviously misleading, because if we were able to allocate expenditure on social services according to working and non-working population (which, for reasons we have already given, we cannot), it is unlikely that there would be really any substantial difference compared with the present allocation according to age-groups.

Allowing for the shortcomings of this comparison, there does not seem much doubt about the fact that in the future there will be a marked shift towards state responsibility for financing the expenditure designed to maintain the non-working population. Thus, while there may not be a " resources problem " in respect of the maintenance of the non-working population, it seems fairly certain that there will be a " transfer problem ".

This transfer problem will naturally be accentuated by any decision which has the effect of increasing either the number or the standard of living of the dependent population. It is extremely likely, for instance, that the cost per head of education will rise automatically as and when the much desired reduction in the average size of classes is achieved. It would seem not unreasonable to put the increase in education costs for this reason alone at something like 20 per cent., or £50 mn. a year. Another much advocated measure is the raising of the minimum school-leaving age to 16. This would add about another £30 mn. to the cost of education, as well as reducing the juvenile working population by over 400,000, or say 200,000 adult male equivalents. It is also reasonable to expect a general rise in pension rates in the near future. Each general rise of 1s. a week in the general level of pensions would cost about £17 mn. a year in 1962 and over £20 mn. in 1982, and even after allowing for a consequent fall in the cost of National Assistance, the net increase could hardly be less than £13 mn. in 1962 and £16 mn. in 1982. If we assume an increase of 5s. per week in the general level of pensions, the extra cost would be some £65 mn. in 1962 and £80 mn. in 1982. If all these changes were made, the total cost in 1962 of social services for those outside working age would be increased from the £1089 mn. estimated in Table XIII to about £1235 mn., and in 1982 from £1292 mn. to about £1450 mn. Of these totals, about £620 mn. in 1962 and £770 mn. in 1982 would be required for retirement pensions.

TABLE XIII

WEIGHTED COST OF CLAIMS TO SOCIAL SERVICES BY DEPENDANTS OUTSIDE WORKING AGE PER EQUIVALENT ADULT MALE WORKER (£MN.)

	1952/53	1962	1972	1982
Annual Claim *a.* 0–14 ..	387	401	357	417
b. 65+ (60 + Women)..	474	688	785	875
Equivalent Adult Male Worker	18·5	18·7	18·6	18·2
Claim per Worker ..	£46·5	£58·5	£61	£71
Index	100	126	131	153
Index of Weighted Cost of Maintenance per Worker (cf. Table IX) ..	100	103·5	108	116

If existing rates of social services contributions are maintained, the proportionate increase in the share of the cost financed out of general taxation will be even more marked than the rise in total expenditure. From the 1952 estimates of National Income and Expenditure (Table XXIX) we ascertain that in that year contributions from employers in the U.K. provided £218 mn. and contributions from insured persons £258 mn., a total of £476 mn. This is equivalent to about £465 mn. for Great Britain. If we assume that, at unchanged rates of contribution, total receipts will vary directly with the size of the working population,[1] we should expect the yield to vary very little over the next thirty years, while if the school age is raised to 16 it can be expected to fall slightly.

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[1] This calculation agrees with the similar one provided by the Government Actuary in his *Second Interim Report* on the National Insurance Funds (H.C. Papers, No. 207, 1952).

On these assumptions, the excess of the cost of social services supplied to the population outside working age would rise by £380 mn., or nearly 100 per cent., between 1952 and 1962, and by a further £230 mn. between 1962 and 1982.

TABLE XIV

FINANCE OF SOCIAL SERVICES (£MN.)

	1952	1962	1972	1982
Cost of existing Services (Table XIII)	861	1089	1142	1292
Increase in Pensions ..		65	75	80
Smaller classes, etc. ..		50	50	50
Higher School Age ..		30	30	30
Total Cost of Services ..	861	1234	1297	1452
Contributions	465	460	460	450
Balance, to be financed out of general taxation	396	774	837	1002

III. SOME PROPOSED SOLUTIONS TO THE TRANSFER PROBLEM

In view of the very substantial increases which may be expected, especially during the next ten years, in the cost to the taxpayer of the provision of social services to the population outside working age, various proposals have been made for reducing the cost of pensions and/or providing sources of finance other than general taxation. One suggestion which has been made is that the retirement age for women should be raised to 65, the same as for men. This proposal might perhaps be justified on grounds of equity, in view of the fact that even at 65 a woman's expectation of pensionable life is considerably greater than a man's; but it could offer only a very trifling contribution to the actual problem under discussion. Five-sixths of all women in the 60–65 age group are either married or widowed, and this proportion is likely to increase. Very few married women are entitled to a pension in their own right, and the saving on raising their retirement age would be negligible; while to raise the retirement age for widows would merely result in converting some retirement pensions into widows' pensions of the same amount. There remain only the single women, of whom it is estimated there were in 1952 140,000 not working between the ages of 60 and 65. At an increased pension rate of 37s. 6d. a week, the direct saving in the cost of pensions would be under £14 mn. a year. If further those who remained at work had to wait until the age of 70 before qualifying for the full extra pension of 15s. a week, there would be additional direct saving of perhaps £2 mn. a year. If many of those deprived of pensions were able to undertake and obtain work, there would also be some additional receipts from contributions and perhaps also from income tax. At the highest, the possible net saving could not exceed about £18 mn. a year. In practice, the saving would be much less than this, for the withdrawal of pension rights would inevitably be accompanied by higher claims for national assistance and for unemployment and sickness benefits. It is doubtful if the actual net saving would be as much as half the direct saving; even if we put it as high as £10 mn. a year, it does not go far towards offsetting an increase of nearly £400 mn. by 1962.

A more drastic suggestion is to raise the retirement age for both men and women. If retirement ages were raised by five years for both men and women, and if at the same time the age at which those who continued to work to qualify for the full additional pension were raised by five years, the saving by the Exchequer would be more substantial, but still by no means decisive. Our projection indicates that in 1962 there will be about 380,000 married and 120,000 other men not working, and eligible for the higher rates of pension assumed in Table XIV. If none of these were eligible for pensions, the saving would be about £75 mn. in 1962 and £95 mn. in 1982. There would be a further gross saving, especially in later years, if increased rates of pension became available only to those who had worked on after the new retirement age of 70. This saving would ultimately increase to a maximum of perhaps £40 mn. a year. If we add in the estimated saving on women's pensions we get a total gross saving for 1982 of something like £150 mn., plus perhaps some increase in receipts from contributions from any who were compelled to remain longer at work and perhaps some increase in tax receipts, but less the cost of increased national assistance and other payments. This would probably be high, and it may be doubted if the net saving would be much more than £50 mn. in 1962 and £75 mn. in 1982, or about one-sixth of the estimated increase in costs of retirement pensions. If those who had continued to work after the existing retiring ages were allowed to retain their rights to higher pensions, the saving in 1962 would be almost as great, but thereafter would be increasingly affected by the higher pensions payable to those who had been compelled to continue working. It may be doubted if the net saving in 1982 would be any greater than the £50 mn. estimated for 1962, or one-ninth of the estimated increase in the cost of retirement pensions and one-twelfth of the estimated increase in the total cost of social services. The main reason for the relatively small size of these possible savings is, of course, the great increase in the expected number, especially of women, over the age of 70. It may well be doubted if savings of this magnitude would justify the social and political repercussions of so drastic an alteration in pension rights.

Since the possible savings in the cost of pensions achievable by even a drastic rise in retirement ages is likely to be modest, it remains to consider the possibility of preventing a rise in the burden on the general budget by means of an increase in rates of contribution. An increase of 20 per cent. in all contributions, or about 1/– a week each from employer and employed, would give a gross yield of about £90 mn. a year. The net yield to the state would, however, be a good deal lower than this, for contributions are allowed as deductions for tax purposes both from earnings and from profits. The net yield from the employers' contribution is therefore only a little more than half the gross yield, while some deduction must also be made from the gross yield from employees' contributions. If we assume that employers' gross profits and employees' gross earnings are alike reduced by the amount of the increased contribution, we may perhaps estimate the net yield of an increased contribution at about 70 per cent. of the gross yield, or rather over £60 mn. for each shilling per week of all-round increase. To yield the extra £300 mn. by which the cost of retirement pensions is expected (on our assumptions) to rise between 1952 and 1962, present rates of contribution would have to be nearly doubled, with a further rise to about 12/6 per week each by 1982.

If we further assume, as is not improbable under conditions of full employment, that trade unions are able to insist on a rise in wages sufficient to cover a large part of the increase in employees' contributions, the increase in the rate of contributions necessary to give the required net yield would be still larger. In the limiting case, where the employer was obliged to raise wages by an amount sufficient to cover the whole of the increase in the employees' contributions, the net yield (unless profits were kept up either by increased productivity or by higher selling prices) would be little more than half the gross yield. In this case contributions would have to be something like 11/6 a week each from employer and employed in 1962 and 15/– a week each in 1982.

Whether increases in rates of contribution of this magnitude would be wise may be doubted. Viewed as a tax, the social security contribution is certainly a very odd one. In terms of the ordinary classification, it is an indirect tax, imposing a specific duty per person employed. Its tendency is undoubtedly to reduce employment, partly because it makes it less worth while to give employment, and partly because it makes it less worth while to take it. A large and sudden increase in it is consistent with the maintenance of the number employed only if wages rise to the point where paid employment remains as attractive as before while at the same time selling prices rise or other costs fall sufficiently to maintain profit margins unimpaired. In the absence of a sharp rise in productivity (or perhaps of a marked improvement in the terms of trade) its effect would be either a fall in employment (though not necessarily a rise in unemployment) or a renewed stimulus to inflation. On the other hand, small and gradual increases, insufficient to offset the benefits of a gradual rise in output per head, would have certain advantages as a means of raising revenue. If a man works at all (above a very small number of hours per week) the contribution does not affect his marginal earnings and is no deterrent to his earning as much as possible; from this point of view, it is preferable to a progressive income tax imposed on small incomes. Another advantage is that, in so far as the ultimate incidence is on earnings, it is probably paid at the expense of consumption rather than of savings. An increase in contributions might also stimulate national savings in quite a different way. The Government's custom of setting aside contributions in a separate social security fund, where they may for a considerable time exceed outgoings charged to that fund, may cause it to budget for a larger total surplus (including the surplus on the fund) than it would otherwise be prepared to do. If these additional savings were wisely invested, the national income might rise faster than under alternative methods of finance, and so provide more resources in later years out of which to meet the rising cost of maintaining the old.

If neither a reduction in benefits nor an increase in contributions can be looked to as a means of meeting more than a fraction of the increasing cost of the social services, does this mean that nothing can be done to help to solve the problem ? The most hopeful line of approach seems to be to abandon our concentration on the direct attempt to solve the Treasury's financial problem and instead to look for measures which, by increasing the rate of rise in the national income, will enable the country to bear its increasing burden with greater ease. It is very probable that such a course would incidentally help to solve the Treasury's own problem, since the more rapid the rise in national income, the more likely it is that the buoyancy of the revenue will provide the necessary resources without higher, or even with lower, rates of tax.

As soon as we look at pensions policy, not with the object of securing an immediate saving of money, but with a view to encouraging as many as possible to work as much as possible for as many years as possible, the way is open for a number of possibilities in addition to those suggested earlier. One of these, which has considerable *prima facie* attractions, is to pay pensions to all those who are past the present retiring ages, whether they are working or not, at a gradually increasing rate, reaching a maximum at the end of five years. Thus, for instance, if the weekly pension for a single man aged 70 were fixed at 52/6 (the rate assumed in Table XIV for a man working until 70 under the present system), his pension between 65 and 66 would be 10/6 a week, between 66 and 67, 21/–, and so on, whether he was working or not. If he was physically unfit to work, he would, in addition, receive sickness benefit at a rate equal to the difference between his pension and full benefit. If, though physically fit, he was unable to obtain work, he would draw unemployment pay on the same reduced basis. If possible, wage agreements should be adjusted to enable the standard rate of wages for men over 65, and for women over 60, to be equal to the standard rates for younger persons less the amounts of their pensions. There would thus be an incentive for the employment of elderly persons no longer able to earn the full standard wage. The direct cost of such a scheme to the Treasury would probably be little, if anything, less than the cost of the present scheme, even after taking credit for any

POPULATION OF GREAT BRITA

MEN

Age	Married			Other			Total	
	Working	Not working	Total	Working	Not Working	Total	Working	Not Working
1952 0–4 ..	—	—	—	—	1·99	1·99	—	1·99
5–9 ..	—	—	—	—	2·03	2·03	—	2·03
10–14..	—	—	—	—	1·65	1·65	—	1·65
15–24..	0·37	0·03	0·40	2·54	0·30	2·84	2·91	0·33
25–34..	2·50	0·02	2·52	1·00	0·05	1·05	3·50	0·07
35–44..	2·98	0·04	3·02	0·53	—	0·53	3·51	0·04
45–49 50–54	2·84	0·06	2·90	0·41	0·01	0·42	3·25	0·07
55–59 60–64	1·81	0·13	1·94	0·30	0·06	0·36	2·11	0·19
65–69..	0·32	0·33	0·65	0·11	0·11	0·22	0·42	0·45
70+..	0·17	0·63	0·80	0·12	0·44	0·56	0·28	1·08
Total 1952	10·99	1·24	12·24	5·01	6·64	11·65	15·98	7·90
1962 0–4 ..	—	—	—	—	1·75	1·75	—	1·75
5–9 ..	—	—	—	—	1·82	1·82	—	1·82
10–14..	—	—	—	—	1·94	1·94	—	1·94
15–24..	0·35	0·03	0·38	2·86	0·34	3·20	3·21	0·37
25–34..	2·18	0·02	2·20	0·85	0·04	0·89	3·03	0·06
35–44..	2·77	0·04	2·81	0·61	—	0·61	3·38	0·04
45–49 50–54	2·78	0·06	2·84	0·50	0·01	0·51	3·28	0·07
55–59 60–64	2·24	0·16	2·40	0·42	0·08	0·50	2·66	0·24
65–69..	0·36	0·38	0·74	0·11	0·12	0·23	0·47	0·50
70+..	0·18	0·66	0·84	0·14	0·53	0·67	0·32	1·19
Total 1962	10·86	1·35	12·21	5·49	6·63	12·12	16·35	7·98
1972 0–4 ..	—	—	—	—	1·79	1·79	—	1·79
5–9 ..	—	—	—	—	1·71	1·71	—	1·71
10–14..	—	—	—	—	1·71	1·71	—	1·71
15–24..	0·42	0·03	0·45	2·87	0·34	3·21	3·29	0·37
25–34..	2·51	0·02	2·53	0·85	0·04	0·89	3·36	0·06
35–44..	2·54	0·03	2·57	0·40	—	0·40	2·94	0·03
45–49 50–54	2·61	0·06	2·67	0·58	0·01	0·59	3·19	0·07
55–59 60–64	2·29	0·16	2·45	0·43	0·08	0·51	2·72	0·24
65–69..	0·43	0·44	0·87	0·20	0·20	0·40	0·63	0·64
70+..	0·24	0·91	1·15	0·14	0·51	0·65	0·38	1·42
Total 1972	11·04	1·65	12·69	5·47	6·39	11·86	16·51	8·04
1982 0–4 ..	—	—	—	—	1·88	1·88	—	1·88
5–9 ..	—	—	—	—	1·84	1·84	—	1·84
10–14..	—	—	—	—	1·75	1·75	—	1·75
15–24..	0·37	0·03	0·40	2·61	0·31	2·92	2·98	0·34
25–34..	2·43	0·02	2·45	1·01	0·05	1·06	3·44	0·07
35–44..	2·81	0·04	2·85	0·47	—	0·47	3·28	0·04
45–49 50–54	2·36	0·05	2·41	0·42	0·01	0·43	2·78	0·06
55–59 60–64	2·13	0·15	2·28	0·53	0·10	0·63	2·66	0·25
65–69..	0·46	0·48	0·94	0·12	0·13	0·25	0·58	0·61
70+..	0·28	1·06	1·34	0·19	0·70	0·89	0·47	1·76
Total 1982	10·84	1·83	12·67	5·35	6·77	12·12	16·19	8·60

ITAL GROUP AND EMPLOYMENT (MILLIONS).

WOMEN

Married				Widowed			Total		
	Not Working								
Working	Husband not retd.	Husband Retired	Total	Working	Not Working	Total	Working	Not Working	Total
—	—	—	—	—	—	—	—	1·89	1·89
—	—	—	—	—	—	—	—	1·95	1·95
—	—	—	—	—	—	—	—	1·58	1·58
0·31	0·53	—	0·84	—	—	—	2·31	0·92	3·23
0·70	2·16	—	2·86	0·05	0·02	0·07	1·34	2·27	3·61
0·74	2·25	—	2·99	0·11	0·05	0·16	1·26	2·40	3·66
0·63	2·04	—	2·67	0·08 0·09	0·04 - - - - 0·10	0·12 0·19	1·21	2·32	3·53
0·16	0·84	—	1·00	0·10	0·17	0·27	0·42	1·09	1·51
0·05	0·56	0·15	0·76	0·07	0·30	0·37	0·20	1·16	1·35
0·02	0·12	0·40	0·54	0·05	0·39	0·44	0·11	1·05	1·17
0·01	—	0·57	0·58	0·03	1·12	1·15	0·06	2·01	2·07
2·62	8·50	1·12	12·24	0·58	2·19	2·77	6·91	18·64	25·55
—	—	—	—	—	—	—	—	1·66	1·66
—	—	—	—	—	—	—	—	1·74	1·74
—	—	—	—	—	—	—	—	1·85	1·85
0·29	0·50	—	0·79	—	—	—	2·52	0·93	3·45
0·61	1·90	—	2·51	0·03	0·01	0·04	1·12	1·98	3·10
0·71	2·14	—	2·85	0·12	0·05	0·17	1·19	2·28	3·47
0·65	2·11	—	2·76	0·09 0·09	0·04 - - - - 0·11	0·13 0·20	1·14	2·37	3·51
0·19	1·00	—	1·19	0·10	0·17	0·27	0·46	1·26	1·72
0·06	0·72	0·15	0·93	0·07	0·30	0·37	0·22	1·32	1·54
0·02	0·10	0·46	0·58	0·06	0·44	0·50	0·12	1·17	1·29
0·01	—	0·58	0·59	0·04	1·46	1·50	0·07	2·43	2·50
2·54	8·47	1·19	12·20	0·60	2·58	3·18	6·84	18·99	25·83
—	—	—	—	—	—	—	—	1·70	1·70
—	—	—	—	—	—	—	—	1·62	1·62
—	—	—	—	—	—	—	—	1·63	1·63
0·34	0·58	—	0·92	—	—	—	2·52	1·00	3·52
0·66	2·03	—	2·69	0·03	0·01	0·04	1·21	2·12	3·33
0·63	1·91	—	2·54	0·09	0·04	0·13	1·00	1·99	2·99
0·64	2·07	—	2·71	0·07 0·09	0·04 - - - - 0·11	0·11 0·20	1·06	2·30	3·36
0·18	0·97	—	1·15	0·10	0·17	0·27	0·40	1·20	1·60
0·07	0·85	0·19	1·11	0·07	0·29	0·36	0·21	1·46	1·67
0·03	0·16	0·55	0·74	0·07	0·48	0·55	0·14	1·36	1·50
0·01	—	0·80	0·81	0·04	1·60	1·64	0·08	2·83	2·91
2·56	8·57	1·54	12·67	0·56	2·74	3·30	6·62	19·21	25·83
—	—	—	—	—	—	—	—	1·77	1·77
—	—	—	—	—	—	—	—	1·75	1·75
—	—	—	—	—	—	—	—	1·67	1·67
0·30	0·51	—	0·81	—	—	—	2·28	0·90	3·18
0·67	2·08	—	2·75	0·03	0·01	0·04	1·23	2·17	3·40
0·68	2·08	—	2·76	0·08	0·04	0·12	1·04	2·19	3·23
0·55	1·80	—	2·35	0·06 0·08	0·03 - - - - 0·10	0·09 0·18	0·91	2·00	2·91
0·19	0·99	—	1·18	0·09	0·14	0·23	0·38	1·18	1·56
0·07	0·80	0·20	1·07	0·07	0·28	0·35	0·20	1·39	1·59
0·03	0·13	0·57	0·73	0·06	0·45	0·51	0·13	1·28	1·41
0·02	—	1·00	1·02	0·05	1·87	1·92	0·10	3·29	3·39
2·51	8·39	1·77	12·67	0·52	2·92	3·44	6·27	19·59	25·86

extra contributions and taxes received directly on account of the extra people at work. But the indirect effects of the higher output and of the consequent rise in real national income might well make the experiment a profitable one even from the strictly budgetary point of view.

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Consistency and Consolidation in the Theory of Interest

By Ralph Turvey

This paper is concerned with the stock approach to the theory of interest, i.e., the theory of asset prices. Its purpose is to show how theoretical and statistical treatments of the demand for assets may be judged in respect of whether or not they make allowance for all relevant variables.[1] A simple example will show what this means. Suppose that a particular owner of wealth can hold his wealth in the form of any of four assets, A, B, C and D. In order to explain his holding of any one of them, say A, it is necessary to know five things besides their prices: the attractiveness of each of the four and the total amount of wealth (his initial holdings) which he can allocate between them. A statement that his holding of A is determined only by its price and attractiveness and the attractiveness and prices of B and C would, in general, be inadequate since it takes no account of the attractiveness of D, the fourth alternative, or of his total wealth. Thus the statement must either be abandoned or treated as being a *ceteris paribus* statement. In the latter case it is preferable that the *ceteris paribus* reservation be made explicitly rather than implicitly.

The point here is not that one can always know what the " other things " held equal are, but merely that when it is possible, these " other things " should be clearly listed. Theoretical statements can therefore be examined to see whether this has been done, and econometric results to see whether their derivation implicity assumed the constancy of " other things " that did not in fact remain unchanged.

Let us consider the simple Liquidity Preference theory of interest. This is couched in terms of *the* quantity of money, *the* liquidity preference schedule and *the* rate of interest, so evidently presupposes that there is only a single group of wealth-owners who have a single liquidity preference schedule and that there is only one interest-bearing asset.[2] If we call the group of wealth-owners the " Public " and the asset " Bonds ", the monetary system to which the theory applies may therefore be described as in Table I, where L stands for liability and A for asset.

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[1] This paper has gone through several versions, each shorter than the preceding one. I am indebted to the following economists for their advice and criticism: William J. Baumol, Ben Chinitz, Alan Day, Evsey Domar, Arnold Harberger, Harry Johnson, Lawrence Klein, Maurice Peston, Melvin Reder, Richard Sayers, Brian Tew and Tom Wilson.

[2] This implies that money and the single interest-bearing asset are exclusive alternatives. Dr. B. Kragh, in his book, *Prisbildningen på Kreditmarknaden, 1951*, to which the present author is much indebted, lays stress on this point.

TABLE I

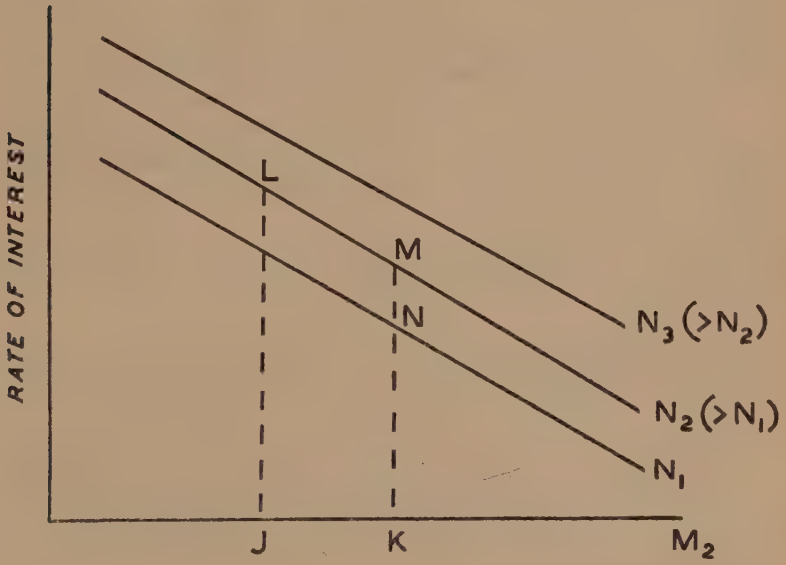
Sector *Assets*	*Monetary Authorities*	*Public*
Money	L	A
Bonds	L	A

If the aggregation problem is neglected or solved, the rate of interest (the price of Bonds) depends upon the quantity of Money, the number of Bonds and the liquidity preference of the public. This is represented in the following diagram, where:—

(*a*) the rate of interest is measured vertically;

(*b*) transactions demand is taken as having zero interest elasticity and the quantity of idle money (Keynes' M_2) is measured horizontally;

(*c*) N is the number of Bonds.



There is not one liquidity preference curve, but a whole set of such curves, one for each possible number of Bonds. These are *ceteris paribus* curves in that they show the effect of changes in the quantity of (idle) Money on the rate of interest, given the number of Bonds. They are drawn on the assumption that a *ceteris paribus* increase in the quantity of Money will lower the rate of interest and a *ceteris paribus* increase in the number of Bonds will raise the rate of interest.

Starting from point L, an increase of JK in the quantity of Money brought about by the open-market purchase of $N_2 - N_1$ Bonds by the Monetary Authorities will, on the assumption just made, lower the rate of interest by MN more than an equal *ceteris paribus* increase in the quantity of Money, since the former also lowers the number of Bonds held by the public by $N_2 - N_1$. Thus a curve passing through points such as L and M, an " open-market operations " curve, must be steeper than the *ceteris paribus* curves. Such an open-market operations curve joins points any one of which can be reached from any other by open-market operations.

The same theory can also be represented as the Bond Preference theory of interest by drawing Bond preference curves in a diagram where the vertical axis measures the price of Bonds and the horizontal axis measures the number of Bonds. Once again the set of *ceteris paribus* curves should be distinguished from the set of open-market operations curves. It may be noted that the particular open-market operations curve which passes through the point representing the currently existing number and price of Bonds is nothing other than the stock demand curve for Bonds.[1]

The question now arises of the relation between the monetary system described in Table I and the monetary system of, say, England. In terms of theoretical analysis the question is: to what type of Money and type of Bonds held by whom can the theory be applied? In terms of econometric analysis the question is: which quantity of Money and what number of Bonds can be used as independent variables to explain an interest rate in terms of the simple liquidity preference theory of interest?

This question may usefully be discussed in terms of Table II, which provides a simplified picture of the British monetary system. The composition of the five sectors distinguished is as follows:—

(*a*) *Monetary Authorities*—the Central Government and its various funds, the Bank of England, the Exchange Equalisation Account, etc.

(*b*) *Commercial Banks*—the clearing banks.

(*c*) *Financial Institutions*—the discount houses, the acceptance houses, savings banks, building societies, insurance companies, etc.

(*d*) *Public*—other firms, local government, households, etc.

(*e*) *Rest of World.*

The table presents the consolidated balance sheets, giving net values, of each of these five sectors. The asterisks indicate that the item in question is zero or negligible.

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[1] For a derivation of the stock demand curve of speculators see Section II of my paper, " The Speculative Demand for Securities and Carry-over ", *The Review of Economic Studies*, Vol. XIX, no. 1, 1950–51. Section III of the paper contains some errors and should be ignored.

TABLE II

Sector	(*a*)	(*b*)	(*c*)	(*d*)	(*e*)
Assets	*Monetary Authorities*	*Commercial Banks*	*Financial Institutions*	*Public*	*Rest of World*
Cash	L	A	A	A	*
Deposits at B. of E.	L	A	A	*	A
Deposits at C.B.	*	L	A	A	A
Foreign Exchange	A	*	*	*	L
National Debt	L	A	A	A	A
Bank Advances	*	A	*	L	*
Other Debts	*	A	L	A or L	L
Equities	*	*	A	L	A or L
Real Assets	*	*	*	A	A

Table II can be converted into a two-sector model by consolidating the accounts of sectors (*b*) to (*e*) into a single sector, the Private Sector. The result is shown in Table III, where various assets are no longer listed because they are now purely internal to the Private sector. As before, the amount of National Debt is less than the total outstanding by the amount held by the Exchange Equalisation Account and the other bodies listed as included in the Monetary Authorities.

TABLE III

Sector / *Assets*	*Monetary Authorities*	*Private Sector*
Cash and Deposits at the B. of E.	L	A
Foreign Exchange	A	L
National Debt	L	A
Real Assets	*	A

Leaving aside the Foreign Exchange item,[1] Table III differs from the simple liquidity preference model of Table I in two respects.

(i) Instead of the homogeneous Bonds there is a heterogeneous National Debt;

(ii) Real assets provide a third alternative form of holding wealth.

Consequently, if the asset preference of the Private Sector is given, rates of interest may be said to depend upon the amount of Central Bank money, the amount and composition of the National Debt and the real assets of the Private Sector. It follows that a simple scatter diagram between the Private Sector's holding of cash and deposits at the Bank of England on the one hand and some representative interest rate would only measure a liquidity preference schedule as understood in the theory if the following conditions were fulfilled during the period covered:—

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[1] So far as the Rest of the World is concerned only its assets in Britain are relevant to the present discussion.

(i) The asset preference of the Private Sector does not change; this requires *inter alia* a constant state of expectations and that there be no significant redistribution of wealth within the Private Sector.

(ii) The composition of the National Debt does not change, for otherwise one interest rate will not remain representative for the whole period.

(iii) Either the amount of National Debt does not change (for a *ceteris paribus* liquidity preference curve) or it and the quantity of money only change when one is exchanged for the other (for an open-market operations curve).[1]

(iv) The amount and attractiveness of real assets does not change.

Thus these four items are the other things which must be assumed equal in theoretical discussion of the liquidity preference curve and which must be included in an econometric analysis.

The most striking feature of this case is that the quantity of money which must be used if consistency is to be achieved is not what is ordinarily understood by the quantity of money: commercial bank deposits cannot be included and commercial bank reserves must be. The question therefore arises whether the consolidation of Table II into a two-sector table cannot be carried out in some alternative manner so that the deposits of the Commercial Banks are included. This requires that the accounts of the Monetary Authorities and Commercial Banks be consolidated together into one account, that of the " Banking System ", while only sectors (*c*), (*d*) and (*e*) are included in the Private Sector. This has been done in Table IV; Foreign Exchange has been left out for the reason given in footnote 1, page 303.

TABLE IV

Sector / *Assets*	*Banking System*	*Private Sector*
Cash and Deposits . .	L	A
National Debt	L	A
Bank Advances	A	L
Other Debts	A	L
Real Assets	*	A

The money holding of the Private Sector now corresponds to the familiar concept of the quantity of money, while the figure for the net National Debt now represents only that part not held by the Commercial

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[1] The composition of the Debt bought or sold must be the same as the composition of the total Debt, otherwise the latter will change so that condition (ii) above is not fulfilled.

Banks. But there are two complications as compared with the consolidation of Table III:—

(i) Money can be borrowed from the Commercial Banks;

(ii) The Commercial Banks hold other liabilities (bills) of the Private Sector.

Thus there are two more " other things " to be held equal in a theoretical analysis and to be included among the independent variables in an econometric investigation of the liquidity preference schedule.

In an ingenious econometric paper[1] A. M. Khusro brings assets other than money into his liquidity preference equation for the private sector by making the rate of interest (on 2½ per cent. Consols) a function of the ratio of the quantity of idle money to the value of assets held by it. He argues that since assets of limited saleability are not close substitutes for money they may be excluded, and on account of statistical difficulties works with only the following debt assets:—

(i) The internal national debt;

(ii) Gross local government debt;

(iii) British investment in securities issued by foreign and Colonial governments, central and municipal;

(iv) British investment in loan and debenture capital of companies registered abroad;

(v) Debenture capital of railways in the United Kingdom;

(vi) Debenture capital of companies registered in the United Kingdom.

The inclusion of (ii), (v) and (vi) is inconsistent with the use of total idle balances because they are both assets and liabilities of the private sector and thus cancel out.

The avoidance of such double-counting by excluding these items is important only in an analysis relating to a fairly long period, however. In the short period new issues are a very small proportion of the total liabilities of firms and local government, and switching from one form of debt to another (except by the Monetary Authorities) is negligible. Viewed as liabilities, therefore, these items will not be substituted for other items or exchanged for money—except to a negligible extent. On the other hand their owners are likely to substitute them for other assets if preferences or relative prices change. Their inclusion as assets and exclusion as liabilities is therefore defensible in a short-period analysis.

Another much less defensible inconsistency exists in Mr. Khusro's paper. He should have subtracted debt to banks (represented by total bank advances and some part of the other debts held by banks) from the sum of assets which are substitutes for money in order to obtain the *net* assets at the disposition of the private sector.

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[1] " An Investigation of Liquidity Preference ", *Yorkshire Bulletin of Economic and Social Research*, January 1952. The criticism made here relates only to Section IV.

The point that consolidation means the cancelling-out of some debts is put clearly by Dr. Klein as follows:[1]

> " the demand for idle balances is a function of the interest rate, prices, income (disposable income plus corporate savings), net holdings of cash and securities of the previous period. The net holdings of securities should add up to zero in a closed system (except for government securities) because everybody's asset is someone else's liability. This is certainly true of bonds, although it is questionable for stocks. We shall represent the total initial assets by time deposits plus the public debt. This leaves an error to the amount of the net foreign debt and *possibly* the value of stocks (as distinct from bonds)."

Dr. Klein overlooks another error; that part of the public debt held by banks should not be included together with cash in total initial assets since only the assets held by the public are relevant. The excess of banks' liabilities to the public over the public's liabilities to the banks is approximately equal to the latter's holding of public debt, since the net assets of the banks are negligible. Thus the public's total net initial assets equal their real assets plus total domestic public debt.

Dr. Klein does allow for the attractiveness of real assets as an alternative form in which wealth may be held, saying " there is no theoretical reason why [the general level of] prices [as indicating the attractiveness of real assets] should not be included as a variable . . . but they have not been found to be statistically significant ".[2] This consideration is insufficient, however. Over the period from 1921 to 1941 the quantity of real wealth changed considerably and it seems rash to suppose without further investigation that this had no effect on the demand for idle balances. Perhaps Dr. Klein will include real wealth as one of the factors determining the demand for money in his future econometric work.

The considerations adduced in this paper and the two isolated examples demonstrate the difficulties which arise in attempts to analyse interest determination in terms of a single liquidity preference equation. It has been shown that this involves splitting the economy into only two sectors and that the resultant high degree of simplification raises considerable problems.

All this is unconstructive. The positive conclusion is that further work should proceed at a lower level of aggregation; something has already been done along this line, for example by Professor Musgrave and by Mrs. Robinson.[3] Furthermore, it would be helpful if writers on interest theory described the monetary system to which their work relates with the aid of tables of the sort used here. They and their readers would then be better able to see whether their analysis is internally consistent, and what relation it bears to the capital and money markets as we know them.

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[1] *Economic Fluctuations in the United States, 1921–41*, 1950, p. 99. Dr. Klein uses statistics of time deposits as an approximation of idle balances.

[2] *Op. cit.*, p. 100.

[3] " Money, Liquidity and the Valuation of Assets ", in *Money, Trade and Economic Growth*, 1951, and " The Rate of Interest " in Mrs. Robinson's book of that title, 1952.

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Industrial Productivity Growth in Europe and in the U.S.

By A. MADDISON

I

One is constantly reminded in current literature that productivity in American industry is higher than in Europe, and practically every European government, the U.S. government, most industrialists and many trade unionists are actively studying means of improving the situation.

The objective of this paper is not to establish the fact that there is a difference in absolute productivity levels and living standards between the two continents, but to estimate the degree to which the disparity between America and Europe has been increasing in the past fifteen years, and to make some tentative suggestions about the future.

In the fifteen years between 1937–1952, output per man hour in American industry rose at the rate of 2·1 per cent. per annum. This rate of growth was higher than in the three European countries, Ireland, Sweden, and the U.K., where there was a positive rate of growth in this period. In the other European countries considered here, i.e., Austria, Belgium, France, Germany and the Netherlands, industrial productivity is still at pre-war levels because their normal rate of development was greatly upset by their experience during and immediately after the war.

Apart from the experience of the past fifteen years, there is evidence that the rate of productivity growth in the U.S. was much higher than in the U.K. and probably than in other European countries over fairly long periods before the war. After an examination of some of the main factors determining American industrial productivity, it appears that the U.S. rate of growth is unlikely to diminish in the future, although it may depend less than in the past on natural advantages which European countries do not possess, and more upon factors which European countries have greater opportunities to emulate.

II

The following indices of output per man and per man hour probably represent long-term movements adequately, but they are not sufficiently valid to make a comparison of changes from year to year worth while.

The measure of output which was used includes mining, manufacturing, gas, water and electricity, but not building. The production indices represent product groups aggregated by value-added weights. The productivity measures derived from such indices of output reflect productivity changes arising from shifts in employment between production activities where value added per man hour is at different levels, as well as changes in output per man hour in individual lines of production. For most countries the weights used in the production indices are for pre-war years, for Sweden an index with post-war weights is used. For the United Kingdom, pre-war weights were used for the period up to 1946, and post-war weights thereafter; for the United States, pre-war weights were used for the years up to 1947, and post-war weights for the following years. The procedures used are described in the appendix. We have tried here to select weights for each country which will enhance the validity of the inter-country comparison.[1]

The employment and man hours series which we used to measure input include salaried workers as well as wage earners. In most cases, it was assumed that the weekly or monthly working hours of salaried workers have moved to the same extent as those of wage earners. No allowance has been made for changes in annual holidays, but as there has been a general increase in most countries, this will have a negligible influence on the comparison between countries.

Apart from methodological difficulties, there are, of course, differences in the quality of the basic data on which our estimates are based. The best data are for the United Kingdom and the Unites States, the weakest for France and Belgium.

III

The war and the immediate post-war economic chaos led to large decreases in output per man and output per man hour in Austria, Belgium, France, Germany, and the Netherlands. In the process of recovery, productivity in these countries rose very rapidly, and in every case faster than in the United States over the period 1948–1952. In spite of the rapidity of growth in these countries in the post-war years, they had not regained the peak pre-war level of output per man hour by 1952, except perhaps Austria and Belgium.

Over the fifteen-year period since pre-war, output per man hour has risen by more than 20 per cent. in the United Kingdom, Sweden, and Ireland. In the United States, output per man hour rose 37 per cent., and output per man 44 per cent. between 1937 and 1952.[1]

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[1] The effect of using alternative weights can be seen in the case of the U.K. and the U.S. For the U.K. an index with post-war weights for the period from pre-war to 1946 would reduce the productivity rise by 7 per cent. below our index. In the case of the U.S., a post-war weighting for the period 1939–1947 would have produced a figure about 8 per cent. lower than that which we have used. For most other countries, there is no choice available, so that the effect of a different weighting system cannot be stated. It seems likely, however, that the influences which have operated in the United Kingdom and the United States have also operated in other countries.

The war was obviously the predominant influence on the productivity achievements of this period, and the fact that its destructive influence was felt in varying degrees in different countries goes some way to explain their relative showing. However, it is disappointing that no net progress was made in the Continental belligerent countries, and that a neutral such as Sweden should have been left so far behind the United States. It is also disquieting that countries such as Belgium, France and the Netherlands should still be at the same stage relative to pre-war as Germany, which suffered from much greater destruction of industrial plant. In the case of the Netherlands, however, industrial production has been expanding more rapidly than in France and Belgium, and war damage was greater. In France, output per man is 6 per cent. higher than pre-war, in spite of the decline in output per man hour, as France is the only European country in which the number of hours worked per week has been significantly extended.

There was a considerable slackening in the average rate of industrial productivity growth for the eight European countries in 1952. In fact, there was a lower rate of growth in each separate country and there was a fall in the United Kingdom. This was partly a reflection of the recession or stagnation of industrial production which took place in most countries after the Korean boom, and which was not accompanied by large dismissals of workers; and it was partly due to an understandable decrease in growth rates in countries where the previous years had shown exceptionally rapid advances, i.e., principally in Germany.

It seems likely that in some continental countries, particularly in Germany, productivity will continue to grow fairly rapidly for the next year or so. After a period of fifteen years, the rate of growth cannot be expected to slacken off to normal as soon as the previous peak level has been regained. In the post-war years, investment has been devoted to segments of the economy where plant had suffered most from war damage, and much normal obsolescence has not been made good. In replacing obsolescent plant which is probably now older than in other, more fortunate, countries, benefit will be gained from the

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[1] It is interesting to compare these estimates with the figures for production and productivity movements in the U.S.S.R., which are given by W. Galenson and D. R. Hodgeman in their papers in *Soviet Economic Growth*, ed. A. Bergson, New York, 1953, pp. 195, 241. Galenson gives the official Soviet index of output per man year, which he considers to overstate Russian achievements. If we deflate the official productivity index to the same extent as Hodgeman suggests the official production index should be deflated, then this shows a rise in Soviet output per man year of 30 per cent. in the period 1937–50. This is smaller than the rise in the United States, but it is greater than the rise in any of the European countries treated here. According to the official Soviet index, the pre-war peak productivity level (1940) had been regained by 1948. No figures are given for output per man hour for this period, but it seems from Galenson's evidence that average working hours have increased in the U.S.S.R. since pre-war.

TABLE I
OUTPUT PER MAN[1]

	1936	1937	1938	1946	1947	1948	1949	1950	1951	1952	*Average annual Compound Rate of Increase 1948–52*	*Average annual Compound Rate of Increase peak pre-war to 1952*
Austria		147				100	120	135	147	149	10.6	0.1
Belgium		118			92	100	105	103	118	118	4.2	zero
France		112	99	80	88	100	106	107	116	119	4.5	0.4
Western Germany ..	134		(137)				100	117	126	130		decline
Ireland	100		97			100	108	114	116	117	3.9	1.0
Netherlands			121		93	100	106	112	115	118	4.2	decline
Sweden		89	88	96	96	100	104	107	109			1.5[2]
U.K.		93	91	96	94	100	104	110	112	109	2.2	1.1
U.S.		80	72	92	96	100	101	111	111	115	3.6	2.5

[1] Cf. Appendix for sources.

[2] 1937–1951.

TABLE II
OUTPUT PER MAN HOUR[1]

	1936	1937	1938	1946	1947	1948	1949	1950	1951	1952	*Average annual Compound Rate of Increase 1948–52*	*Average annual Compound Rate of Increase peak pre-war to 1952*
Austria						100	114	127	139	141	9.0	n.a.
France		124	114	82	88	100	108	108	115	120	4.7	decline
Western Germany ..	129		(128)				100	113	124	127		decline
Ireland			98			100	107	113	116	117	3.9	n.a.
Netherlands ..			123		93	100	105	111	115	118	4.2	decline
Sweden		88	88	94	96	100	104	106	109			1.6[2]
U.K.			88	94	94	100	104	109	110	107	1.7	1.4
U.S.		83	81	91	96	100	103	110	110	113	3.1	2.1

[1] Cf. Appendix for sources.

[2] 1937–1951.

accumulation of technological knowledge of the past years, and consequently the returns on investment in terms of increased productivity will tend to be higher for some time in Germany, and perhaps in France, Austria, and the Netherlands as well, than in the U.K. or U.S.

In the post-war period, Irish industrial productivity has grown faster than American. Ireland is, however, rather a special case as it is a country in which industrial development has been relatively recent, with a rapid growth in output, and many changes in its composition. When a country is acquiring new industries at a relatively rapid pace, the composition of output will tend to shift in favour of industries with a relatively high output per man, and the contribution of these inter-industry shifts will enhance the rate of productivity growth. In countries where the composition of output is changing slowly, the major part of the rise in productivity in any year will arise from increases within the individual industries which form part of the aggregate known as industrial production. It seems likely that the rapidity of productivity growth in Ireland in the post-war years is partly attributable to these changes in the composition of output, although it may also be due to gradual improvements in the skills of workers drawn from agriculture.[1]

IV

From Table III we can see that the rate of growth of output per man hour in British industry was lower between 1937–1952 than the average for the preceding three decades. The slackening relative to pre-war was even greater in the United States where output per man hour grew at 2·1 per cent. per annum between 1937–1952, a rate appreciably lower than the 2·9 per cent. per annum achieved between 1907 and 1937. In both the United Kingdom and the United States, output per man hour has grown since 1948 at as high a rate as in the three pre-war decades. American output per man rose faster than output per man hour between 1937–1952, due to the increase in working hours. This increase in the length of the working week is a reversal of a long-run trend, with the consequence that the increase in output per man between 1937–1952 was considerably higher than in the preceding three decades.

We have observed in Sections III and IV that:—

(*a*) the United States had a considerably higher rate of growth of output per man hour than the United Kingdom over a long period before the war;

(*b*) although the American rate of growth slackened during the war years, it has now regained its pre-war pace;

(*c*) since 1948 the British rate of productivity growth has been no higher than the average of the three pre-war decades, and United

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[1] Similar considerations apply to Austria, and perhaps help to explain its relatively rapid (i.e., compared with France or Belgium) re-attainment of pre-war levels.

TABLE III

AVERAGE COMPOUND RATE OF ANNUAL INCREASE IN PRODUCTIVITY IN UNITED KINGDOM AND UNITED STATES INDUSTRY

	U.S.	*U.K.*	*U.S.*	*U.K.*
	Output per man		*Output per man hour*	
1907–1937	1.8	1.4	2.9	1.7
1937–1952	2.5	1.1	2.1	1.4[1]
1937–1948	2.1	0.7	1.7	1.3
1948–1952	3.6	2.2	3.1	1.7

Source: Dr. L. Rostas, *Comparative Productivity in British and American Industry*, p. 42, for 1907–1937; later years from our Tables I and II.

Dr. Rostas' figures refer to output per wage earner, which gives his figures an upward bias compared with ours, as the ratio of salaried workers to wage earners increased considerably between 1907–1937 in both countries. The coverage of Dr. Rostas' figures is different from ours; for the United Kingdom, building is included, and for the United States, only manufacturing is included. For the United States a figure including mining would show a more rapid rise between 1907–1937, as productivity in mining rose more rapidly than in manufacturing in this period.

States productivity growth has outpaced the United Kingdom to a slightly greater extent than in pre-war years;

(*d*) in the post-war years Austria, Belgium, France, Germany and the Netherlands have had a rate of productivity growth higher than in the United States, but these countries had not regained their pre-war positions by 1952;

(*e*) Sweden and Ireland are the only European countries with real productivity gains to show since pre-war which are comparable even with those of the United Kingdom.

On the basis of these observations, it would seem that the future holds a prospect of growing inequality between American and European productivity and living standards. In the rest of this paper we attempt to analyse some of the reasons why the United States has had such an advantage over Europe in the past, whether these advantages are likely to be modified in future, and whether these reasons point to any possibilities of remedial action by European countries.

V

The United States has much richer resources of energy and raw materials than Europe and, until the last decade, the United States enjoyed increasing returns in most of its basic raw materials industries. In the production of coal, gasoline, natural gas, iron ore, and pig iron, America has a much greater advantage over Europe than it has in manufacturing generally. The comparative advantage of the United States in terms of labour productivity is almost twice as high in these lines of production than it is in most manufacturing industries.[1] This differential productivity advantage has been reflected in the relative cost of products such as steel, and other metals, electrical, and other kinds of energy, and to some extent seems to have lowered the relative cost of capital goods in general.[2] American industrialists have therefore been faced with a situation in which labour was scarcer relative to other resources than in Europe, and they have been able to use raw materials and particularly energy much more lavishly per unit of labour employed. Not only is the United States advantage over Europe greater proportionately for these products than for others, but in the forty years before the war, productivity in U.S. mining was rising more quickly than in manufacturing.[3]

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[1] 1938–1952.

The American economy has now reached the stage where its richer mineral resources, and, to a lesser extent, its energy resources are being depleted, and an ever increasing amount of investment will have to be made in these industries in order to secure productivity increases.[4] The rate of productivity increase in United States manufacturing will tend therefore to be greater in future than in its raw materials industries, and may also be greater than in energy production. There may therefore be an increase in the relative cost of many materials and energy, and the tendency to increase inputs of such goods per unit of labour may slow down. The tendencies towards increasing cost can, however, be combated by technological progress, or by using imported materials such as petroleum and iron ore. Even if the depletion of America's richer natural resources should slow down the rate of growth of industrial productivity, this does not imply a comparative decline in the United States position *vis-à-vis* European countries. Productivity growth in the European coal mining industries has lagged behind manufacturing[5] and coal is the major source of energy for European industry. The United States is better placed than most European countries to combat the problem of increasing costs of basic materials by use of improved technology or by imports.

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[1] Cf. L. Rostas, *op. cit.*, pp. 33, 36 and 38; before the war, most mining industries in the United States had an output per man nearly four times as high as in the United Kingdom, whilst in manufacturing generally United States productivity was only twice to two-and-a-half times as high as British.

[2] Cf. M. Gilbert and I. B. Kravis, *An International Comparison of National Products and the Purchasing Power of Currencies*, O.E.E.C., 1954, p. 33, "To the extent that relative prices affect the allocation of resources, the European price structure is more favourable to Consumption and less favourable to Investment than is the case in the United States".

[3] S. Fabricant, *Labor Savings in American Industry, 1899–1939*, pp. 8 and 15, who estimates that output per man hour in mining (including oil and gas) rose by 270 per cent. between 1902–1939, and in manufacturing by 178 per cent. in the period 1899–1937.

[4] Cf. *The Report of the President's Materials Policy Commission*, 1952, *passim*. It appears that in the period 1939–1950, productivity in mining industries rose much less than in most manufacturing industries, especially if we consider productivity in metal ore industries in terms of metal content rather than the actual quantity of ore. Cf. *Productivity, Gauge of Economic Performance*, United States National Association of Manufacturers, 1952.

[5] Cf. *Quarterly Bulletin of Coal Statistics for Europe*, 1953, Vol. II, No. 1, p. 10, which gives figures showing the growth of output per man-shift since pre-war.

The United States has enjoyed a bigger domestic market than any European country since the turn of the century. The size of the economy will affect the degree of standardisation of particular products, and the specialisation of firms, plants, labour and managerial skills, and even of whole industries. The advantages of such specialisation will continue to increase as the economy grows. However, it is often argued that economies of scale arising at the plant or firm level through the production of long runs of standardised products can be achieved even in small countries[1], e.g., it may be argued that a small country can sustain an optimum plant for assembling automobiles. But often a product will require component parts or capital equipment whose optimum scale of production may be far beyond the capacity of small countries, e.g., machine tools, dies for pressing automobile parts, etc. It is, of course, possible for small countries to import such parts, tools, and equipment, but unless the final product, for the fabrication of which these imports are used, is homogeneous with that produced elsewhere, the producer who is supplying the imports is unlikely to enjoy economies of scale. Even if a small country is big enough to support production units of optimum size for all the products it produces, it very often will not be able to support several large plants operating within a highly competitive market, and its market may be dominated by a single monopolist protected from competition by tariff barriers, and with little incentive to increase his productivity. There may, of course, be several plants, each operating at the optimum for a certain stage of production, but each importing non-standardised parts and auxiliary equipment. Where economies arise through standardisation of products, a big country or, at least, large integrated markets, will always tend to have an advantage, because, in such circumstances, large productive units usually enjoy a smaller share of the market, and will have more incentive to develop technological improvements and to increase productivity through the force of competition. In any case, it can hardly be an accident that it is in mass-produced standardised commodities—radios, automobiles, rubber tyres, electric lamps, tins, and glass containers, that the United States has the biggest advantage over Europe as far as productivity in manufacturing is concerned.[2]

In addition to the large markets which American industrialists have enjoyed, they have also been faced with a market expanding more rapidly than that of any West European country because of the rapidity of population growth, and for this reason have had much more buoyant expectations of the future than European entrepreneurs, although this optimism was modified during the thirties by the traumatic experience of the great depression. Consequently, they have maintained high rates of investment, and rapid rates of depreciation. Because of the relative cheapness of certain investment goods, and of energy, the United States has been able to achieve a greater relative amount of investment for a given slice of the national product. As we have said above, there may be a long-run tendency for the relative cheapness of investment to disappear, and if the rate of population growth slows down, entrepreneurial expectations may become less optimistic. However, the United States government seems to have as firm an intention of maintaining the economy at high levels of activity as most European governments. On the supply side, it seems that the propensity to save is unlikely to diminish as the economy gets wealthier. There seems to be little reason to suppose that the proportion of resources devoted to investment is likely to decline.

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[1] Cf. Professor Viner's argument, *The Customs Union Issue*, p. 46.

[2] Cf. L. Rostas, *op. cit.*, pp. 33, 36, 38. In these industries American productivity in pre-war years was about four times as high as British.

In most European countries the rate of investment has been very high since the end of the war, and this is doubtless one of the main reasons for the rapid growth of productivity in this period. Politically, it may be very difficult for European countries to maintain these high rates of investment, if, at the same time, they continue to have large military expenditures. In countries like France this has been achieved at the cost of constant inflation and great and increased social inequality which are already imposing enormous social strains. Also, investment maintained by such pressures will not always be directed into the most productive channels if part of it is rationed according to a crude set of priorities by governments which are *dirigiste* by force of circumstances, and the rest is privately contributed in speculative conditions of inflation.

American investment in human resources has been much greater than in Europe, at least as far as education, and particularly technical education, is concerned. The United States has had a system of free public education for much longer than most European countries, and currently it has a much greater proportion of its population in higher educational institutions than any European country. There appear to be about three times as many people graduating from universities each year *per capita* of the population in the United States, than in the United Kingdom[1], and the amount spent on scientific research in universities is about seven times as high, yet the United Kingdom is one of the most advanced European countries as far as higher education is concerned. The proportion of the American population receiving higher education has been increasing very rapidly in the past fifty years, and in spite of the present very high levels, it seems likely that this proportion will continue to increase in the long run.[2] The average level of American higher education is probably lower than that of most European countries, but at its best, in fields such as technology and business administration, it is probably superior. The use by American industry of relatively very large numbers of university graduates has obviously contributed to its high productivity, and many of the European productivity teams which have visited the United States have commented on the effect which the use of trained technologists and managerial personnel has had in developing receptivity to new ideas and in spreading the use of the best production methods. It also increases the social mobility of the labour force and leads to much less waste of talent.

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[1] Cf. the reports of the Anglo-American Council on Productivity, *Education for Management*, and *Universities and Industry*, which give some comparative figures.

[2] A comparison of the number of teachers *per capita* in some European countries with the ratio in the United States can be found in M. Gilbert and I. B. Kravis, *op. cit.*, p. 180. In higher education (i.e., from 18 years onwards) the figure given for the United Kingdom for 1950 is 32 per cent. of the United States figure, for France 7 per cent., and for Germany 18 per cent.

If European higher education were to be developed on the same scale as in the United States, the cost of maintaining a large student population would be a much greater burden on the relatively poor economies of Europe than it is in the United States.

There are certain other respects in which the industrial labour force in the United States is superior to that of European countries. American industrial labour realises the advantages which can arise from using new methods, has confidence in the technical competence of management and accepts new techniques readily. The geographical mobility of labour is fairly high in the United States, and there have been very rapid changes in recent years in the relative importance of particular states in terms of population due to internal migration. In Europe, on the other hand, labour mobility has decreased considerably since pre-war due to the hotchpotch of rent controls existing in most countries, and the restrictions on intra-European migration.

The United States has probably benefited by its relatively small degree of dependence on international trade as compared with most European countries. In many European countries large-scale structural maladjustments have often been caused by changes in trading relationships, and many industries have suffered sudden declines in their foreign markets which have rendered a large part of their capacity redundant. In such situations, governments have tended to shelter their industries by protection or have inaugurated adjustment schemes which have kept inefficient units going. In the United States, industry has suffered as a whole in times of depression, or particular industries have declined because of technical innovations which have rendered them obsolete, but very few American industries have ever suffered simply because of sudden declines in their export markets. The American government has usually been very willing to impose tariffs, particularly in times of general depression, but the protective effect of trade restrictions on non-agricultural products has been much smaller than in most European countries.

We have examined some of the factors which help to explain why American industrial productivity has developed more rapidly than European. We have suggested that there is a long-run tendency for the relative cost of energy and raw materials to increase. This may tend to reduce the rate at which such resources are used to replace labour. The tendency to reduce the use of such resources because of their increasing relative cost may be counterbalanced by higher ratios of investment than in the past which can be supported by a population which grows increasingly wealthier. The advantages of specialisation and standardisation arising from bigness are likely to continue, and the quality of the labour force is likely to improve. The dependence of the United States on international trade is likely to remain much smaller than that of any European country, so that the inefficiency resulting from tariff protection will be less, and the problems of structural adjustment created by changes in the pattern of international trade will be much smaller. On balance, there seems to be little reason to think that the rate of growth of productivity in United States industry will not be high in the future.

Thus, there is a very distinct possibility that the U.S. will not only maintain its large lead in industrial production over European countries, but that it will steadily increase its advantage. This fact poses very serious political and economic problems for European countries which are much wider than the particular problem of international trade equilibrium which Professor Williams has raised.[1] It is obvious that some of the factors responsible for the higher rate of productivity growth in the U.S. are not attributable to natural advantages and that in certain respects European countries could take action to foster the spread of technical education, to increase the amount of applied research, to ease barriers to European trade, and seek in other ways to increase the degree of specialisation and standardisation; they could remove obstacles to labour mobility and refrain from supporting inefficient industries. In fact, if it were feasible to follow a combination of these policies, it would probably be possible to catch up on part of the U.S. lead.

Paris.

APPENDIX ON SOURCES USED IN TABLES I AND II

AUSTRIA—Output per man: *Monatsberichte des Österreichischen Institutes für Wirtschaftsforschung*. Production weights: 1937. Hours: *O.E.E.C. General Statistical Bulletin*, July 1953 (henceforward referred to as *Bull.*), p. 114.

BELGIUM—Production index: *Bull.*, p. 5. Employment: 1937 and 1947 from *Recensement Générale de la Population, de l'Industrie et du Commerce du* 31 *Décembre 1947*, Tome X, p. 79; linked 1947–52 (December) figures from *Revue du Travail* and *Bulletin de Statistique*. Production weights: 1936–38 except for metal products (1948–50 weights).

FRANCE—Production, employment and hours from *Bulletin Mensuel de Statistique*. Production weights: 1938.

GERMANY—Production: *Die Industrie der Bundesrepublik Deutschland.* Production weights: 1936. Employment: 1936 from *Statistisches*

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[1] Cf. John H. Williams, *Economic Stability in the Modern World*, Stamp Memorial Lecture, 1952.

Handbuch von Deutschland, Munich, 1949, p. 272. An approximate indicator of the movement 1936 to 1938 may be gained, *op. cit.* p. 480, from the movement of employment amongst operatives in the Reichsgebiet (in industry and building). 1949–1952 from *Wirtschaft und Statistik*. Hours of salary earners assumed to move *pari passu* with those of wage earners (same sources as for employment). The official productivity indices have a different scope from ours and the annual figures seem to be improperly weighted.

IRELAND—Production: Official indices for individual branches are reweighted to form an aggregate index by using 1937 net values of output as arithmetic weights. Data on production, average numbers engaged, and hours worked, from June issues of *Irish Trade Journal and Statistical Bulletin*.

NETHERLANDS—Output per man: *Maandschrift van het Centraal Bureau voor de Statistiek*, June 1953, p. 432. Hours: *Bull.*, p. 66, for 1948–51; for 1938, from *U.N. Statistical Year Book 1952*, p. 50. Production weights: 1938.

SWEDEN—Production index and wage earner hours: *Kommersiella Meddelanden*, June 1953, pp. 37–38. Production weights: 1947 gross values multiplied by the 1945 ratio of net to gross output. Numbers of wage and salary earners from *Industri*. (It was assumed that the working hours of salary earners have moved *pari passu* with those of wage earners.)

UNITED KINGDOM—Production index with 1935 weights for 1937–46; for 1946–52 the new index of production with 1948 weights was used, but the link between the two indices was made on the basis shown in *Interim Index of Industrial Production, Studies in Official Statistics No. 1*, 1949, p. 46 (excluding building). Employment for 1948–52: *Monthly Digest of Statistics*, August 1953, p. 3, linked with " old series " figures for pre-war in *Annual Abstract of Statistics 1935–46*, pp. 107–109, 114–116. Hours: *Annual Abstract of Statistics 1952*, p. 124, and *Ministry of Labour Gazette*, March 1953, p. 79.

UNITED STATES—Production calculated from *Federal Reserve Bulletin*, December 1953. It differs from the official revised index given *op. cit.*, p. 1324, for the years 1939–1947. The official index uses composite 1939 and 1947 weights, whilst we have used 1939 weights for these years as shown in *op. cit.*, p. 1250. Our production index is therefore based on three separate series with different value-added weights, which have been linked together. For the period 1937–39, 1937 weights, for 1939–47, 1939 weights, and from 1947 onwards, 1947 weights. Employment: *Business Statistics 1951*, Supplement to the *Survey of Current Business*, p. 53, and *Federal Reserve Bulletin*, April 1953, p. 408. Hours: *Bull.*, p. 66.

PRODUCTION—Production indices include mining, manufacturing, gas, water and electricity for all countries, except France (manufacturing only), Germany, Sweden and U.S. (mining and manufacturing only). Production weights are represented by value added except for Sweden (*q.v.*).

The Origin of Ricardo's Theory of Profits[1]

By G. S. L. Tucker

I

The publication of Mr. Sraffa's *Works and Correspondence of David Ricardo* throws new light on the origin of Ricardo's theory of profits.[2] Mr. Sraffa notes that the elements of this theory were contained in Ricardo's letters to Malthus of 10 and 17 August 1813, and adds: "At this stage, and up to March 1814, Ricardo and Malthus were not explicitly concerned with the question of the importation of corn, which had not yet aroused the public interest."[3] This observation does not exclude the possibility that the question of the effects of restrictions on the corn trade had been taken up by the two economists in the latter part of the year 1813; but even so, a reconsideration of the influence of the practical problems of the time appears to be called for. Although Ricardo's *Essay on the Influence of a Low Price of Corn on the Profits of Stock* was written in February 1815 "in anticipation of the debates in the House of Commons on the question of the Corn Laws"[4], the original factors that led him to consider the causes of changes in the rate of profit—those which affected the direction of his thought in the year 1813—remain to be investigated and identified.

In this task, assistance is afforded by the sixth volume of Mr. Sraffa's edition, which contains letters of the period 1810–1815 hitherto unpublished, including the long awaited letters from Malthus to Ricardo. From the present point of view it is particularly unfortunate that Malthus's letters from March 1812 to June 1814 are wanting: for this period we must attempt to infer his views and interests from Ricardo's replies.[5] Mr. Sraffa has also shown that five of Ricardo's letters, those written between February and August 1813, were misdated in

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[1] I am indebted to Mr. P. Sraffa for advice and criticism. The opinions expressed, of course, should not be identified with those of Mr. Sraffa himself.

[2] *The Works and Correspondence of David Ricardo*, edited by Piero Sraffa with the collaboration of M. H. Dobb, Cambridge University Press for the Royal Economic Society, 1951–2. (Nine volumes of the edition have been published.)

[3] *Ibid*, Vol. IV, p. 3.

[4] See editor's note, *ibid*, Vol. IV, p. 4.

[5] Malthus does not appear to have published anything on political economy in the years 1812–13. At that time he was engaged on his projected edition of *The Wealth of Nations*; this was subsequently abandoned (*Works and Correspondence of David Ricardo*, ed. Sraffa, Vol. VI, p. 159, n.). An investigation of the periodicals of these years has not revealed an article that could be attributed with reasonable confidence to Malthus's authorship, other than his well known reviews of pamphlets on the Bullion Question in the *Edinburgh Review* of February and August, 1811.

James Bonar's edition of the *Letters to Malthus*.[1] These include the letters of 10 and 17 August 1813, which contain Ricardo's earliest references to his theory of profits.

These five letters were misdated 1810 by Bonar; consequently they were printed as the first five letters of the series. From them, the reader of Bonar's edition progresses to what was in fact Ricardo's first letter to Malthus, that of 18 June 1811. This is followed by the early letters on currency questions up to that of 17 December 1812. Owing to the omission of what should have been the next five letters, one would expect a break in continuity to be apparent at this point; but this is delayed in an interesting way. Subsequently to his letter of 17 August 1813, which referred to the causes of the rise of profits during the war, Ricardo wrote two letters to Malthus—one on 30 December 1813 and one on 1 January 1814—providing information about the Amsterdam and Hamburg exchanges. In Bonar's edition these follow the letter of 17 December 1812, which was also concerned with the foreign exchanges, thereby suggesting a uniformity of subject matter throughout the year 1813.

In Bonar's edition, the break occurs after the letter of 1 January 1814 (on the Hamburg exchanges) : this is followed by Ricardo's letter of 26 June 1814, which was explicitly concerned with the relation between restrictions on the importation of corn, and changes in the rates of profit and interest. The reader is suddenly plunged into the question of the Corn Laws, which naturally presents itself as the stimulus that turned Ricardo's attention from monetary problems to issues connected with the effect of the accumulation of capital on the rate of profit. The significance of Ricardo's earlier letters of 10 and 17 August 1813, both of which were concerned with profits, is obscured by their incorrect dates, as Mr. Sraffa has noted.[2] In particular, Bonar's omissions from the correspondence of 1813 have hitherto inhibited from the very outset any suggestion that the question of changes in the rate of profit may have been connected with, or grown out of, the currency problems which provided the original subject matter of the discussions with Malthus. However, when these letters are read in their proper context, it does not appear unreasonable to suppose that Ricardo's theory of profits may have arisen in this way.

II

Ricardo's treatment of profits in his letters of 10 and 17 August 1813 represents in effect his first exposition of the theory that Malthus later identified as one of the principal tenets of " the new school of political economy, as contradistinguished from that of Adam Smith ".[3]

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[1] *Letters of David Ricardo to Thomas Robert Malthus, 1810–1823*, Oxford, Clarendon Press, 1887.

[2] *Works and Correspondence of David Ricardo*, ed. Sraffa, Vol. IV, p. 3, n.

[3] *Quarterly Review*, January, 1824, pp. 305–08.

In his earlier incidental references to the problem, made in connection with the bullion controversy, Ricardo had kept close to Adam Smith, and had ascribed variations in the rates of profit and interest simply to competition, or the greater or smaller quantity of capital seeking investment.[1] Up to March 1813, there is no reference in the correspondence to changes in profits; Ricardo and Malthus were concerned with the relations between currency supplies, price levels, exchange rates, and gold movements. From June 1814, the main question discussed related to the effect on profits of restrictions on the importation of corn; this was called ' our present question ' to distinguish it from the problems of currency and foreign exchanges, which were still referred to occasionally.[2]

The real difficulty arises in connection with the interpretation of Ricardo's two letters of 10 and 17 August 1813. In the former, Ricardo mentioned an opinion that he had already expressed concerning the effect of the opening of new foreign markets and the extension of existing ones. (This does not appear in his earlier letters.) He agreed with Malthus that both the nominal and the real value of English exports and imports had risen (probably over the period since 1793); but this, he asserted, did not prove that there had been an increase of capital and a general rise of profits. Then, in a new paragraph, he argued that a rise of prices is always the effect, and never the cause, of an increase in the supply of money; that higher prices cannot call new money into circulation.[3]

In the letter of 17 August, Ricardo agreed that England had enjoyed an increase of wealth since the beginning of the war, but he held that there was no necessary connection between this prosperity and a higher rate of profit. In fact, profits had risen: this was quite consistent with his own theory. The growth of capital tends to depress the rate of profit, but it had not done so in the period concerned because there had been great improvements in agriculture in England and other countries. Then, as in the previous letter, he commenced a fresh paragraph in which he asserted that only a tendency towards a fall of commodity prices could lead to the introduction of new supplies of money in the ordinary course of events.[4]

It is necessary to decide whether the question of the growth of capital and the rise of profits since 1793 was directly connected with Ricardo's observations on the relation between commodity prices and monetary circulation. In each letter, the use of separate paragraphs may suggest a logical separation between the two groups of ideas. However, let us assume for the moment that Ricardo was in fact examining the successive steps in a single line of reasoning which had been put forward by Malthus in one of the missing letters, and let us attempt to reconstruct Malthus's argument from the nature of Ricardo's replies.

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[1] *The High Price of Bullion, a Proof of the Depreciation of Bank Notes* [1810], *Works and Correspondence*, ed. Sraffa, Vol. III, p. 92; Letter to the *Morning Chronicle* on the Bullion Report [1810], *ibid*, Vol. III, p. 143.

[2] *Ibid*, Vol. VI, pp. 116, 119.

[3] *Ibid*, Vol. VI, pp. 93–4.

[4] *Ibid*, Vol. VI, pp. 94–5.

Malthus, it may be inferred, had argued that the opening of new markets since 1793 had raised the profits of foreign commerce, and consequently the general rate of profit available to English investors.[1] This general rise of profits had been associated with a rise of commodity prices and an increase in the total value of English production. Apparently he had also referred to the growth of capital over the same period; perhaps this was regarded as an indication of higher profits and a consequent increase in saving. If the extension of foreign trade had given a higher money value to English production, Malthus may have thought that this had necessitated an increase of the means of payment; that although notes had certainly been issued in excess during the war (as Ricardo claimed), some more moderate increase in the supply of money would have been justified in order to support the higher level of profits and prices. To this, as we have seen, Ricardo replied that an extension of foreign trade cannot directly raise the general rate of profit; that the accumulation of capital would have reduced profits had it not been for improvements in agriculture; and that in any case higher commodity prices can never call new money into circulation. Higher prices were the effect and not the cause of greater supplies of money.

This interpretation is perhaps strengthened by the fact that Malthus later put forward a very similar argument in his *Principles of Political Economy* (1820). There he observed that the opening of a new foreign trade, which exported commodities less in demand at home in return for others that were more highly valued by consumers, must raise the profits of the merchant, and consequently the general rate of profit. This would take the form of an increase in the total value of the quantity of commodities obtained directly, or indirectly by means of international trade, from the application of a given amount of capital and labour.[2] In these circumstances, he contended, the quantity of money or its velocity of circulation will rise in order to accommodate itself to the higher money value of transactions. Merchants will probably return a part of their increased foreign credits in the form of bullion; but even if bullion were not imported, this would be a time when fresh paper currency could be issued without depressing the foreign exchanges or raising the market price of gold.[1] Here we have the argument that the extension of foreign trade, which raises the aggregate value of the commodities available in a country, may call new money into circulation. This, as we have seen, was the proposition that Ricardo denied in his letters of 10 and 17 August 1813.

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[1] This opinion was consistent with Adam Smith's theory of profits. Smith writes : " The acquisition of new territory, or of new branches of trade, may sometimes raise the profits of stock, and with them the interest of money, even in a country which is fast advancing in the acquisition of riches ". *Wealth of Nations*, ed. Cannan, Vol. I, p. 95. In a letter to Hutches Trower of 8 March, 1814, Ricardo summarised the differences between Malthus and himself, and referred to Malthus's opinion that " if new markets are discovered, in which we can obtain a greater quantity of foreign commodities in exchange for our commodities, than before the discovery of such markets, profits will increase and interest will rise." *Works and Correspondence*, ed. Sraffa, Vol. VI, p. 104.

[2] T. R. Malthus, *Principles of Political Economy Considered with a View to their Practical Application*, London, J. Murray, 1820, pp. 448–55, 460. For the reservation that the rise of the aggregate value of commodities relates to the output of a given amount of capital and labour, see pp. 414, 443.

Moreover, in his *Principles*, Malthus asserted that the rise of the total money value of transactions in England between 1793 and 1814 could be partly accounted for in this way. He writes:

> "It can . . . little be doubted that in this country, from 1793 to 1814, the whole exchangeable value of the produce, estimated either in domestic and foreign labour, or in bullion, was greatly augmented every year. In this increase of value, as well as riches, the extension of our foreign commerce has been considered, . . . as a most powerful agent; and certainly till 1815, no appearances seemed to indicate, that the increasing value of our imports had the slightest tendency to diminish the value of our domestic produce. They both increased, and increased greatly, together, estimated either in bullion or labour."[2]

The inference is—although Malthus does not state it—that some increase in the issues of the Bank of England would have been justified during the war by the greater aggregate value of the commodities to be circulated.

It is very easy to slip into the assumption that Malthus's analysis of the effect of changes in demand was developed as a reply to Ricardo's theory of profits. On the present interpretation of the correspondence however, it appears more probable that Ricardo's theory was intended as a criticism of Malthus's treatment of the influence of foreign trade during the war. In opposition to the theory which has just been attributed to Malthus, Ricardo made two main points in his letters of 10 and 17 August 1813: first, he claimed that the extension of foreign trade cannot directly raise the general level of profits (this was associated by Malthus with a rise in the value of the commodities obtained by the application of a given amount of capital and labour); secondly, he argued that only a tendency towards a fall of prices can attract new money into circulation. To argue the first point he would have been required to show what does in fact determine changes in the rate of profit. This would explain the differences of opinion between Malthus and himself that Ricardo reported to Hutches Trower in his letter of 8 March 1814.[3]

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[1] *Ibid*, pp. 452–3.
[2] *Ibid*, p. 459.
[3] *Works and Correspondence of David Ricardo*, ed. Sraffa, Vol. VI, pp. 103–05.

III

If it is assumed that Ricardo's theory of profits was introduced into the correspondence with Malthus in this way, the question remains whether the arguments that have just been imputed to Malthus concerning the effects of foreign trade on profits, prices, and monetary circulation were offered in connection with the currency questions arising from the Bullion Controversy which had hitherto been at issue. There does not appear to be any particular reason for rejecting this idea, although a gap in the correspondence covering a period of nearly five months prior to August 1813 precludes a definite answer. In the course of discussion following an original difference of opinion, the immediate subject matter may successively change, as new ways of looking at the problem present themselves, and as intermediate links in the chains of reasoning are subjected to examination. Breaking into the discussion at discontinuous intervals, and even then hearing only one speaker, we may find it difficult to decide whether we are listening to a continuation of the same debate, or the beginning of a fresh one. In the present case, however, there may be some grounds for adopting the former alternative.

In his early contributions to the Bullion Controversy, Ricardo attributed the depreciation of the English foreign exchanges, and the excess of the market price of gold over the mint price, to the excessive issue of notes by the Bank of England; that is, to the 'redundancy' of the English currency.[1] Some writers interpreted his use of the term 'redundancy' to mean simply the increase of the note issue, and drew attention to the fact that the foreign exchanges had occasionally improved at the same time that the Bank's issue had risen. Ricardo replied that an increased issue would not depress the foreign exchanges if it were accompanied by a corresponding increase of capital and production; for in these circumstances there would be a greater amount of commodities to be circulated. In his *Reply to Mr. Bosanquet's Practical Observations on the Report of the Bullion Committee* (1811), he wrote:

> "If the commerce of a country increases, that is to say, if by its savings it is enabled to add to its capital, such country will require an additional amount of circulating medium; but, under all circumstances, the currency ought to retain its bullion value; that is the only sure test by which we may know that it is not excessive."[2]

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[1] See for example his letter on "The Price of Gold", *Morning Chronicle*, 29 August, 1809, *Works and Correspondence*, ed. Sraffa, Vol. III, pp. 15–21; *The High Price of Bullion* [1810], *ibid*, Vol. III, especially p. 78.

[2] *Ibid*, Vol. III, p. 244. See also his letter to the *Morning Chronicle*, 18 September, 1810, *ibid*, Vol. III, pp. 139–41; Notes on the Report of the Bullion Committee, *ibid*, Vol. III, pp. 356–58; Observations on Vansittart's Propositions respecting Money, Bullion and Exchanges, *ibid*, Vol. III, pp. 421–2; Evidence given before the Commons' and Lords' Committees on the Resumption of Cash Payments, 1819, *ibid*, Vol. V, pp. 372, 417–18.

With the growth of capital and production, commodities tend to fall in price, as their quantity increases in relation to the existing supply of money. With a convertible standard, new money would be attracted into circulation; with an inconvertible standard, fresh paper could be issued without raising the price of bullion or depressing the foreign exchanges.[1] (This, it will be noticed, is very similar to the opinion which Ricardo expressed in his letters to Malthus of 10 and 17 August 1813.)

The characteristic feature of Ricardo's early approach is that he regarded the redundancy of English currency—that is, the excess of the actual supply of inconvertible paper over the convertible issue which would have circulated in the same conditions of production and trade—as the sole cause of the depreciation of the country's foreign exchanges.[2] In so far as Ricardo criticised the policy of the Bank of England after the restriction of cash payments, Malthus found himself in substantial agreement; but he also believed that the foreign exchanges and the price of bullion could be affected by the state of the balance of payments, independently of a change in the relative currency supplies of England and other countries. In his review of Ricardo's pamphlet on *The High Price of Bullion* and the *Reply to Bosanquet*, Malthus wrote :

> "The great fault of Mr. Ricardo's performance, is the partial view which he takes of the causes which operate upon the course of Exchange . . . there are, we conceive, two causes, perfectly distinct in their origin, though nearly similar in their effects, by which the exchange is affected. The first, and the most ordinary, is the varying demand for different sorts of produce arising from the varying desires and necessities of the nations connected with each other by commerce: The second is a comparative redundancy or deficiency of currency, in whatever way it may be occasioned."[3]

To illustrate the first of these causes, Malthus cited the effect on the foreign exchanges of the introduction of a new imported commodity, of a harvest failure and abnormal importations of corn, and of the transmission of a subsidy to a foreign country or government. Only the net influence of the two sets of causes could adequately explain the facts of contemporary experience, and in particular, the occasional correlation of an improvement in the foreign exchanges with an increase in the note issue.[4]

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[1] See Ricardo's *Proposals for an Economical and Secure Currency* . . . [1816], *ibid*, Vol. IV, pp. 56–7.

[2] This interpretation of Ricardo's use of the term 'redundancy' has been borrowed from Professor Viner's *Studies in the Theory of International Trade*, London, Allen & Unwin, 1937, pp. 136–7.

[3] *Edinburgh Review*, Vol. XVII, February, 1811, p. 342.

[4] *Edinburgh Review*, Vol. XVII, February, 1811, pp. 359–60. Ricardo replied in an Appendix to the fourth edition of *The High Price of Bullion* [1811]. See *Works and Correspondence*, ed. Sraffa, Vol. III, pp. 99–127, especially pp. 113ff.

This original difference of opinion lay behind the subsequent correspondence between Malthus and Ricardo on currency questions. Ricardo attempted to make concessions to Malthus's point of view, but nearly two years of debate brought little progress towards agreement. In a letter of 23 February 1812, Malthus maintained the truth of the conclusions of his original review[1]; in December of the same year Ricardo stated succinctly a slightly modified version of his original argument: "I cannot help thinking that there is no unfavourable exchange which may not be corrected by a diminution in the amount of the currency, and I consider this to afford a proof that the currency must be redundant for a time at least. Whilst the exchange is unfavourable it is always accompanied though not always caused by an excess of currency."[2]

The arguments that were imputed to Malthus in the preceding section, and to which Ricardo replied in his letters of 10 and 17 August 1813, may have represented an extension of this difference of opinion on the question of the factors influencing the foreign exchanges. If we assume that in 1813 Malthus had already worked out what he believed to be the full implications of his theory of the effect of an extension of foreign trade on profits, prices, and monetary circulation, as they appeared in his *Principles* of 1820, it is not unreasonable to suggest that he may have offered this theory as an explanation of the occasional improvement of the English foreign exchanges at a time when the note issue was increasing and the general level of prices rising. Ricardo believed that only a *fall* of prices could attract new money into an economy, or permit an issue of fresh paper consistently with the stability of the foreign exchanges. Malthus may well have argued that the opening of new foreign markets would create a situation in which a tendency towards a rise of profits and the total money value of produce could be associated with both an increased issue of money and the maintenance or even the improvement of the foreign exchanges. For, as we have seen, he concluded in his *Principles*, first, that the successful extension of foreign trade would probably lead to the importation of bullion (or an improvement in the foreign exchanges); and secondly, that a greater supply of money would be appropriate in view of the increased value of the commodities available in the domestic market.

Perhaps Malthus felt that this theory gave further support to his belief that "it is positively incorrect to state redundancy or cheapness of currency in any sense in which these terms can be fairly understood, as the sole cause of the variations of the exchange".[3] He may also have thought that it possessed current practical significance: in the period 1811–1813, a slight rise in the issues of the Bank of England

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[1] *Works and Correspondence of David Ricardo*, ed. Sraffa, Vol. VI, p. 82.

[2] *Ibid*, Vol. VI, pp. 87–88.

[3] *Ibid*, Vol. VI, p. 62.

and a moderate rise of commodity prices were associated with a noticeable improvement in both the Hamburg and Paris exchanges.[1]

IV

The second possible interpretation of Ricardo's letters of 10 and 17 August 1813 is that the question of the causes of the rise of profits during the war should be considered as something quite separate from the question of the effect of an increased value of produce on monetary circulation. On this assumption, we should have to regard the exchange of views on the subject of profits as a new discussion, distinct from the currency problems hitherto at issue. In this case it would be difficult to decide whether it was Malthus or Ricardo who first raised the new question, and we should be ignorant of the factors that provoked this new interest in the effect of the accumulation of capital upon the rate of profit. Thus there appear to be good reasons for enquiring whether an economic problem of public interest had arisen, probably at some time in the first half of the year 1813, of a nature that would arouse interest in the question of the causes of changes in the general rate of profit.

In a letter of 22 March 1813, Ricardo asked Malthus: " What do you think of Mr. Vansittart's financial talents ? "[2] He was referring, as Mr. Sraffa notes, to Vansittart's New Plan of Finance, which was introduced in the House of Commons on 3 March 1813. This complicated measure relaxed the austerity of the Sinking Fund principles that had been laid down in 1792 and 1802. We know from Ricardo's article on " Funding System ", first published in 1820 in the *Supplement to the Encyclopædia Britannica*, that he disapproved of this innovation of 1813. In particular, he reacted strongly against Vansittart's reference to the dangers of paying off the National Debt too quickly.[3] Vansittart, following similar sentiments which had been expressed in the House of Commons in 1807 by Lord Henry Petty, asserted that the rapid redemption of public debts would lead to a glut of capital seeking investment, and a disastrous fall of profits and interest.[4] In his article on " Funding System ", Ricardo urged against this point of view the doctrines of Say and James Mill, and went on to argue that " the employment of capital is of equal extent with our ability of supplying food and necessaries for the increasing population, which a continually augmenting capital would employ."[5]

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[1] See the statistics provided by J. W. Angell in his *Theory of International Prices*, Harvard University Press, 1926, pp. 495–7.

[2] *Works and Correspondence*, ed. Sraffa, Vol. VI, p. 91. Malthus gave his opinion, for Ricardo referred to it in his letter of 24 March, 1813 : see *ibid*, Vol. VI, p. 92.

[3] *Ibid*, Vol. IV, pp. 175ff.

[4] *Hansard's Parliamentary Debates*, 1812–13, Vol. XXIV, 1083–4, 1104. For Lord Henry Petty's opinions, see *ibid*, 1806–07, Vol. VIII, 585–6.

[5] *Works and Correspondence*, ed. Sraffa, Vol. IV, pp. 178–179.

We cannot exclude the possibility that Vansittart's modification of Sinking Fund principles, and his reference to the danger of a glut of capital, may have set Ricardo thinking about the effect of the accumulation of capital on the rate of profit. There is no direct evidence in favour of this supposition: all we know is that Vansittart's proposals attracted Ricardo's notice in March 1813. But we are perhaps prone to overlook the importance of questions connected with the growth and repayment of the National Debt during the Napoleonic Wars as a factor stimulating interest in the effect of accumulation on profits. Lauderdale's opinion that capital might be accumulated too quickly had been put forward primarily as a criticism of the rigour of the Sinking Fund[1]; and William Spence had expressed similar views in his well-known pamphlet, *Britain Independent of Commerce*. The National Debt, he claimed, was on the whole a source of national prosperity, for it converted surplus capital into revenue and favoured spending ; " the sinking fund, if it were to operate extensively, which, from the constant creation of new debt, it has never yet done, would be in its consequences highly baneful and injurious ".[2] Brougham, in 1804, referring to the possibility of a glut of capital seeking productive investment in a mature economy, had discounted the dangers of the growth of public debts, and had concluded that " in a wealthy state of society, there is much less mischief to be apprehended from the conversion of a certain portion of capital into revenue, while the accumulation is going on, than men have generally been disposed to believe ".[3]

James Mill's *Commerce Defended* (1808) was primarily written as an answer to Spence and Cobbett, but he also referred to the views of Lord Henry Petty and Lauderdale.[4] His doctrine of the impossibility of a general glut of commodities was intended in part to counter these opinions which tolerated or even favoured government spending and the less rapid redemption of public debts. Is it unlikely that in 1813, provoked by Vansittart's statements in the House of Commons, Ricardo went one step further, to add to " Mr. Mill's idea " a theory which would explain changes in the general rate of profit and the rate of interest without recourse to the idea that the accumulation of capital could itself lead to a general glut of commodities ?

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[1] *An Inquiry into the Nature and Origin of Public Wealth, and into the Means and Causes of its Increase*, Edinburgh, Constable, 1804, pp. 229ff.

[2] William Spence, *Britain Independent of Commerce ; or Proofs, deduced from an Investigation into the True Causes of the Wealth of Nations, that our Riches, Prosperity, and Power, are derived from Resources inherent in ourselves, and would not be affected, even though our Commerce were annihilated*, London, T. Cadell and W. Davies, 1807, pp. 70–74, n.

[3] " O'Connor's Present State of Great Britain ", *Edinburgh Review*, Vol. V, October, 1804, pp. 104–24. The passage quoted is on p. 115.

[4] James Mill, *Commerce Defended. An Answer to the Arguments by which Mr. Spence, Mr. Cobbett, and others, have attempted to prove that Commerce is not a Source of National Wealth*, London, Baldwin, 1808, pp. 85, n. and 96, n.

Secondly, there is the question of the Corn Laws. As Mr. Sraffa observes,[1] the Select Committee on the Corn Trade, which was appointed on 22 March 1813, interested itself mainly in the potentialities of Ireland as a corn producing country.[2] But the debate in the House of Commons of 15 June 1813 on the subject of the Committee's Report was a quite general one on the principle of protection to agriculture.[3] Replete with references to Adam Smith and to the possibility that the proposed measures would raise the price of corn and consequently the wages of labour[4], it was of a nature calculated to arouse the interest of an economist. One of the speakers against the proposals of the Committee was Francis Horner, who was acquainted with Malthus and Ricardo. On 29 June 1813 the consideration of the Report was postponed; a number of petitions were subsequently presented in both Houses, but the debate was not resumed until 5 May 1814, by which time we know that the problem had attracted the attention of both Malthus and Ricardo.

But we also know that the question of the Corn Laws had been brought to Malthus's notice at some time between 11 May 1813, when the Report of the Select Committee on the Corn Trade was presented, and 16 June 1813, the date on which the newspapers reported the Commons' debate on the Committee's proposals. At the end of this article, I have included a copy of an unpublished letter from Malthus to Francis Horner, dated 16 June 1813. (For this I am indebted to Mr. Sraffa, who called my attention to it in connection with the problem which is being discussed.) The letter shows that Horner had forwarded to Malthus a copy of the Committee's Report, asking him to give his opinion of its findings. Malthus deferred doing so until the day following the opening of the debate. The opinions he then expressed were guarded and impartial; if anything, he seems to have been inclined against the Committee's recommendations.[5] Assuming that these views were also communicated to Ricardo at about the same time (that is, in June or July 1813), there would have been little or nothing to which he could have taken exception. Nevertheless, the knowledge that Malthus was thinking about the effects of restrictions on the importation of corn in June 1813 somewhat increases the probability that Ricardo was also doing so. And this may have led Ricardo to consider the causes of changes in the rate of profit.

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[1] *Works and Correspondence of David Ricardo*, ed. Sraffa, Vol. IV, p. 3.

[2] See the Report presented on 11 May, 1813, *Parliamentary Papers*, 1812–13, Vol. III, pp. 479ff.

[3] *Hansard's Parliamentary Debates*, 1813, Vol. XXVI, 644–70.

[4] See for example *ibid*, 649–51, 656–7.

[5] At the time of the debate, British agriculture was still in a prosperous state. The activities in Parliament followed from apprehensions concerning the conditions which would probably follow the coming of peace in Europe.

V

We are left with a number of hypotheses to explain the origin of Ricardo's theory of profits. First, the problem may have been thrown up as a by-product of the controversy with Malthus on the subject of currency and foreign exchanges, in connection with Malthus's views on the effects of the acquisition of new foreign markets. On the other hand, Ricardo's ideas concerning profits, which were put forward in his letters of 10 and 17 August 1813, may have been entirely independent of the currency questions previously at issue: on this assumption it is possible that the underlying problem was either the New Plan of Finance introduced by Vansittart in March 1813 or the Corn Law question debated in Parliament in June 1813. The discussion has not, of course, exhausted the range of possibilities; those which have been considered depend heavily upon conjecture.

Pending the discovery of additional evidence, the first hypothesis, which connects Ricardo's early comments on profits with the problem of currency and foreign exchanges, seems to have most in its favour. But perhaps the only conclusion that should be drawn from the present discussion is that a number of economic problems arose in the first half of the year 1813, any one of which would have been sufficient to evoke Ricardo's interest in a theory of profits. And it should be noted that there is no reason to suppose that they may not have produced a joint effect on the direction of Ricardo's thought. This conclusion has long since been anticipated in a general way by Professor J. H. Hollander, who wrote: " In the generation which intervened between Adam Smith and Ricardo, and more particularly in the decade and a half from the Bank restriction to the corn law controversy, the problem of economic distribution was thrust much to the fore. . . . From 1800 to 1815, the years of Ricardo's hibernation as a theoretical economist, the three great struggles—currency, corn-laws and public finance— . . . were acute political issues, challenging the attention not merely of economic students but of all intelligent men of affairs."[1]

A LETTER FROM T. R. MALTHUS TO FRANCIS HORNER

The following letter from Malthus to Francis Horner was made available by Mr. P. Sraffa. The original is in the Horner Papers.

[From the Rev^d^ T. R. Malthus][2]

BRIGHTELMSTON,
June 16th 1813

My dear Horner,

I did not expect that the discussion on the Corn Trade would have come on so soon. I have just looked over the Report which you were so good as to send me, and should be inclined to agree with you in thinking that the present state of things does not seem particularly to require the interference of Parliament. I cannot however agree with you in the opinion you seem to hold, that restrictions upon importation have no tendency to encourage the growth of an independent supply of corn. There is certainly reason to doubt their policy on other grounds, that is, on the ground of the wealth which you sacrifice to attain this particular object; but I cannot, without violating what appear to me to be some of the most fundamental principles of Political Economy, believe, that an increase in the relative demand for home corn will not produce an increase in the relative supply. In 1803 the price of the quarter of wheat fell to 56 shillings; and I by no means feel persuaded that the smaller importations of foreign corn which took place subsequently to 1804, were not occasioned by the laws of that year. There was no great change in the value of money from 1804 to 1809. With regard to the small importations of 1812, notwithstanding the enormous price of 124 shillings, (a rise of above 30 per cent) compared with the year before, it must I think chiefly be attributed to the difficulty of obtaining corn on the continent rather than to a growth at home equal to our wants.

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[1] J. H. Hollander, *David Ricardo, A Centenary Estimate*, Baltimore, The Johns Hopkins Press, 1910, p. 73.

[2] Written in subsequently.

If there were no corn laws whatever I am decidedly of opinion that our general wealth would increase more rapidly, but I think that we should not so nearly grow our own consumption as at present. If Europe were like one large nation with regard to importation and exportation, its cultivation would proceed like the cultivation of a large nation; and it could never answer to bring *indifferent* land under tillage in one district, till the *good* lands in other districts, from which there was an easy communication, were first cultivated.

England in reference to Europe may be considered as a large manufacturing district, with the natural tendency of such a district to import a considerable part of its corn, though with a power of growing it, if forced. In using this force there is reason to believe that we shall check our manufactures more than we shall increase our agriculture, and this it appears to me forms the true argument against the system; an argument surely of great weight although we allow that an independent supply is practicable by such means.

With regard to moderate and steady prices I do not see how they are to be accomplished in this way. Till the independent supply is obtained the price will be at or above the price at which importation is allowed, and afterwards a little excess of supply not being relievable by exportations, on account of the general high prices of corn at home, I doubt if prices would be steady. The great argument for the Report is an independent supply—not lowness or steadiness of prices.

I dont quite agree with you about the interest of the Landlords. High nominal prices of corn appear to me to be advantageous as it gives them a greater command of all those commodities the materials of which are foreign. But one never ought to hear a word about the interests of landlords and farmers. The Report and evidence is faulty in this respect and conveys an improper impression.

The Post waits.

Ever truly Yours

T R Malthus

Mrs M is well and desires to be kindly remembered.

University of Melbourne.

Non-Traded Goods and International Factor Price Equalisation

By E. Victor Morgan and G. L. Rees

The purpose of this note is to extend the reasoning on international trade and factor prices, developed by Professors Ohlin[1] and Samuelson,[2] by considering the effects of changes in factor prices on the prices of non-traded goods. The model used is that of Professor Samuelson, with two modifications. We assume two countries which, following Samuelson, we call " Europe " and " America ", and two factors of production, which we call " labour " and " land ". The two countries are endowed with the two factors in different proportions, " Europe " having relatively much labour and little land, " America ", relatively much land and little labour. Each country has the same production function, relating inputs of the two factors and outputs of the products, and this function shows constant returns to scale. The industries of each country are assumed to work under conditions of perfect competition, and factors of production are mobile as between different uses in their home country, but cannot move across national frontiers. The " law " of diminishing marginal productivity is assumed to operate everywhere.

The modifications of the Samuelson model are those which are necessary in order that there may be both traded and non-traded goods. Instead of two goods only, we assume that there are four, which we call A, B, C and D. The four goods are assumed to use the factors of production in different proportions. The actual proportions used would depend, of course, on the factor price ratio, but we suppose that, at any given wage-rent ratio, A would use a higher proportion of labour to land than B. We therefore describe A as " labour intensive ", and we assume that our four goods, in order of their labour intensity, rank A, B, C and D. Finally, in order that we may have both traded and non-traded goods, we must assume some obstacle to international exchange, and we suppose that this takes the form of transport costs.

First, consider the two price systems as they would be if each found its own equilibrium without any international trade. Prices will depend, of course, on demand for the products as well as on the supply of the factors of production. Except in the unlikely event of demand conditions being so dissimilar as to offset the difference in factor endowment, good A, the most labour intensive of the four, will be cheaper in terms of either B, C or D in " Europe ", where labour is abundant, than it will in " America ", where labour is scarce. Good B will be less cheap in terms of A, but cheaper in terms of C and D in " Europe ". Similarly, C will be cheaper in " Europe " in terms of D, but dearer in terms of A and B, and good D will be dearer in " Europe " in terms of all the others. As a simple example, relative prices might be as follows:

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[1] *Interregional and International Trade.* Cambridge: Mass. 1933.

[2] "International Trade and the Equalisation of Factor Prices," *Economic Journal*, June, 1948, and "International Factor Price Equalisation once Again," *Economic Journal*, June, 1949.

In " Europe " .. 100 A = 90 B = 80 C = 70 D
In " America " .. 70 A = 80 B = 90 C = 100 D

We shall suppose that, without trade, prices in the two countries would stand in this sort of relationship to one another and, for the sake of simplicity, we refer to A and B as " relatively cheap " in " Europe " and to C and D as relatively cheap in " America ".

We now suppose that trade is opened up between the two countries and, for the present, that transport costs form the same proportion of the value of each good. It is then obvious that, if trade takes place at all, " Europe " must be an exporter of good A and an importer of good D. Whether goods B and C will be traded depends upon whether the gain to be made from the difference in their relative prices is sufficient to cover the costs of transport. For our present purpose we must suppose that this is not so; goods B and C will then not enter into international trade, but their prices and production will of course be influenced by the trade in goods A and D. It is the nature of this influence that we must consider further.

As a result of trade, there will be an expansion of the A industry and a contraction of the D industry in " Europe ", while in " America " the D industry will expand, and the A industry will contract. The contraction of the land intensive D industry in " Europe " will release both land and labour, but it will release land in a higher proportion to labour than it is being used (at the existing wage-rent ratio) by the expanding A industry. If the existing wage-rent ratio were maintained, not all the land released by the D industry could find employment. Hence rents must fall in relation to wages (the wage-rent ratio must rise) and this will lead to the use of a higher proportion of land to labour throughout the economy (including the B and C industries). In " America ", an opposite sequence will be taking place. The decline of the labour intensive A industry releases more labour than can be employed (at the existing wage-rent ratio) in the expanding D industry; the wage-rent ratio is therefore reduced, and this leads to the employment of a higher proportion of labour to land in all industries. In the absence of trade, labour would have been relatively dear in " America ", and land relatively dear in " Europe ". Hence, the changes resulting from trade are clearly in the direction of equalising the relative prices of the factors. Professor Samuelson has shown that, under the very stringent conditions of his model, equalisation must be complete. Once we admit transport costs and non-traded goods, it can only be partial,[1] but even this partial equalisation will have a considerable influence on the " domestic sectors " of the two economies.

A first and obvious effect will be on the price relationships between our four products. In " Europe ", good A will clearly rise, and good D will fall in price in terms of either of the others. The movement of factor prices will tend to reduce the price of the land intensive good C in terms of B, as well as of A, but we have also to consider the demand side. In terms of partial equilibrium analysis, these influences can be stated as follows: for good A, in " Europe ", there will be a rise in the supply curve (owing to an unfavourable factor price change) and a rise in the demand curve (due to the development of the export trade). For the " European " D industry the converse will apply; there will be a fall in the supply curve and a fall in the demand curve. For good B, there will be a rise, and for good C a fall in the supply curve, but the influences on demand are more complex.

The " European " demand for good C will be influenced by an income effect and a series of substitution effects. Trade will increase the real income of the community and so may be expected to lead to an increase in the demand for good C on this account. The relevant substitution effects will be a tendency to substitute C for A and B (leading to an increase in the demand for it), and a tendency to substitute D for C (leading to a decrease in the demand for C). It is clearly conceivable that, if substitution between C and D is very close, this effect may so far outweigh those working in the opposite direction as to produce a net contraction in the C industry, in spite of the favourable (from its point of view) change in factor prices. Should this be so, it is obvious that the price of C must fall in relation to those both of A and B. This situation would only arise, however, if substitution was very strong as between C and D and relatively very weak in other directions. A much more likely situation is that in which there is some expansion in the C industry, and this expansion will obviously be greater the closer substitute good C is for A or B. We have, therefore, to ask whether either of these effects can be so strong that the expansion of the industry will more than offset the favourable movement of factor prices and leave C dearer in relation to either A or B than before.[2]

The answer is that such a movement is impossible under the assumptions of our model. Consider the limiting case in which substitution between A and C causes such an expansion of the C industry that the price of C in terms of B remains constant instead of falling. This could only happen (given perfect mobility of factors and constant returns to scale) if the expansion of the C industry were such as to maintain the demand for land, and prevent any fall in the rent/wage ratio. But if there were no change in the factor price ratio, there could be no change in the A/D price ratio or, indeed, in the price ratios of any two of our four goods. In other words, all goods would continue to be produced at constant prices until complete specialisation in the trading sector was reached. Hence the constant B/C price ratio represents a limiting case which could only be reached with complete specialisation in traded goods, and need not be reached even then. A rise in the price of C in terms of B would imply a rise in the rent/wage ratio: i.e. it would imply a secondary effect which more than offset the primary effect from which it originated.[1]

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[1] There are, of course, other circumstances which may prevent equalisation; cf. S. F. James and J. F. Pearce, " The Factor Price Equalisation Myth ", *Review of Economic Studies*, 1951–52, No. 49.

[2] C could clearly not become dearer in terms of both, for then the substitution effect which causes its rise in price would be reversed.

To summarise our conclusions so far, trade in goods A and D must lead to a fall in the price of good C in relation both to A and B in " Europe ", and is likely, though not certain, to lead to an expansion of the C industry. In " America ", of course, the effect would be just the opposite; the relatively labour intensive good B would fall in price in terms both of C and D, and the B industry would probably expand.

Hitherto we have assumed that transport costs formed the same proportion, *ad valorem*, for all goods, and so it was the goods at the extremes of the factor intensity scale, where the difference in relative prices was greatest, which entered into trade. It could be, however, that A and D were so difficult to transport that transport costs prevented trade, while for B and C they formed so small an element that trade in these goods was worth while. In that case " Europe " will export good B and import good C, while A and D will represent the domestic sector. Trade will proceed in essentially the same way as in the previous example; " Europe " will specialise on the more labour intensive good, B, and " America " on the more land intensive C. This will raise the wage/rent ratio in " Europe " and reduce it in " America " and, by the same reasoning as in our previous example, this will reduce the relative price of good D in " Europe ", and in all probability lead to an expansion in its output. There are only two significant differences between this situation and the previous one. Since the domestic industries now use relatively more of the scarcer factor in each country, their influence will be stronger in mitigating the tendency to factor price equalisation, which is created by trade. From this it also follows that there will be a smaller expansion in the " scarce-factor intensive " domestic industry for any given release of that factor by the declining industry producing the imported good.

So far we have looked at the effect of factor price equalisation on the domestic sector. What of the effect of the domestic sector on factor price equalisation ? The expansion (if it occurs) of the domestic industry which uses the scarcer factor most intensively will tend to sustain the demand for that factor, and so to mitigate the effect of trade in equalising factor price ratios. In the terms of the first example of our model, the expansion of the land intensive C industry in " Europe " will check the fall of rents there, and the expansion of the labour intensive B industry in " America" will check the fall in wages there. This tendency will be stronger, the greater the tendency to expansion in the domestic industry using the scarce factor most intensively, and the more intensively that factor is used in this industry. Again, in terms of our model, the second condition would be working most strongly in our second example, where the expanding industry in Europe was not C, but D, the most land intensive of the four. The first condition (maximum expansion of the growing domestic industry) will, as we have seen, be stronger the closer is substitution between the product of the expanding domestic industry and other domestic goods and exports, and the less close is substitution with imports.

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[1] Complementarity of C with A will, of course, tend to reduce the demand for C, while complementarity with D will tend to increase it. In the latter case the price and output of C would be higher than they would otherwise be, but the argument of the preceding paragraph will still hold good.

It is clear, however, that a larger volume of trade will be necessary to secure any given change in factor price ratios if there is a domestic sector. When there are transport costs, factor price equalisation can, at best, be only partial, and it is likely to go less far the larger is the domestic sector. The existence of a large domestic sector also creates an enhanced possibility that complete specialisation in traded goods may be reached before factor prices are equalised (or equalised as nearly as transport costs will allow).

In a two commodity model such as that of Professor Samuelson, when once specialisation is reached, any further change in relative factor prices is ruled out. The proportions in which factors are used will be determined by the proportions in which each country happens to have been endowed with them. If the proportions of the factors are thus fixed, the relationship between the respective marginal products, and so the ratio of their earnings must be fixed too. A corollary of this is, of course, that changes in the price of the product have no effect on the volume of production, and that the terms of trade depend entirely upon the strength of the demand of each country for the product of the other.

When there is a domestic sector, however, specialisation in traded goods need not mark the end of any movement towards factor price equalisation. Suppose that when A and D are the traded products the price of good D falls to the point at which the " European " D industry is eliminated, while there is still an unsatisfied " American " demand for A, and while it is still possible to export more of good D from " America ", at a gain which will more than cover transport costs. The volume of trade will grow and the A industry in " Europe " will expand. The factors required for this expansion cannot be released by the now extinct D industry, and must come from a contraction of B or C, or both. But since A is more labour intensive than either B or C,[1] this process, like the contraction of the D industry examined earlier, can only take place to the accompaniment of a rise in the wage/rent ratio, and an increase in the proportion of land to labour in all three industries. Thus an extension of trade may still bring factor price ratios closer together even beyond the point of complete specialisation in traded goods. The effects upon the price system will again be very similar to those already analysed. A, B and C will all be raised in price in terms of the imported good, D, in " Europe "; A will rise in terms of both B and C, and B will rise in terms of C, while in " America " opposite changes will occur.

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[1] On the assumption that transport costs bear a uniform proportion to value.

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Book Reviews

The English Utilitarians. By SIR LESLIE STEPHEN. Vol. I: *Jeremy Bentham* (1900). viii + 326 pp. Vol. II: *James Mill* (1900). vi + 382 pp. Vol. III: *John Stuart Mill* (1900). vi + 525 pp. (Series of Reprints of Scarce Works on Political Economy, Nos. 9 to 11.) London School of Economics. 1950. £2 2s. 0d. per set.

The English Utilitarians may well be called a classic, for it furnishes the classic view of the 19th century as viewed by the Manchester School, and for fifty years it has enabled students to feel well acquainted with men whose own works they had not read. Even so profound a person as Beatrice Webb could say in *Our Partnership* (p. 210), " Bentham was certainly Sidney's intellectual god-father, and though I have never read a word of him, his teaching was transmitted " through Herbert Spencer and, of course, Leslie Stephen. Since the views of the Manchester School were those neither of Bentham nor of the Webbs, it is a little puzzling to find out what was transmitted. At any rate, these three great volumes represent one aspect of truth, and may serve as a critique of statism and our own tendency to an over-governed world. Certainly they carry one back to a simpler day, when the alternatives were between a very slight amount of government and a trifle more, between very low taxes and slightly higher ones, between " liberty " and being forced to install an adequate sewage system.

The book was received with great acclaim on its first appearance in 1900. Stephen had been editor of the great *Dictionary of National Biography* from 1882 to 1891, writing no fewer than 378 of the biographies himself. He knew who the important persons in the century were. He also had some standing as a philosopher. Besides his studies of the 18th century, his *Science of Ethics*, twenty years before, had shown that Mill, Darwin, and Herbert Spencer had established a kind of social Darwinism which would work things out properly if the state could be kept in its place.

In the first volume of *The English Utilitarians* Stephen gave a brilliant picture of the political and social structure of England in the 1830's, and then gave a brief sketch of Bentham's life before going on to analyze his doctrine. He passed indulgently over the whimsicalities, absurdities, and fantastic literary style of Bentham, and then, after conceding that the *Defence of Usury* was sound in its ideas, passed on to more important matters in the next two volumes. Even so, William Graham, reviewing the book in the *Contemporary Review* (79, pp. 221–38), chided Stephen as one who " admires Bentham too much ", though on all other points he admired the work. " There is scarcely a notable man in the century in political, moral, economical, or religious thought that does not appear in these pages ", continued Graham, the author of *English Political Thought from Hobbes to Maine*. If one may enter a caveat against omniscience, there is one important genuine disciple of Bentham's whose name does *not* appear in these pages, though Professor Finer's magnificent biography shows his real importance. That is Edwin Chadwick. But, of course, Chadwick was concerned with sanitation and the bills of mortality rather than with " morality " or " economics ".

In the second volume Stephen went on to show that James Mill, Ricardo, and Malthus, besides making their own contribution, also gradually discarded the doctrinaire and unworkable parts of Benthamism. He gives a beautiful exposition of the origins and final form achieved by the ideas of each man, and brings to life not only the personalities but the controversies of the time. It was in the third volume, however, that Stephen clearly enjoyed himself most, for J. S. Mill, if mistaken in some points and self-contradictory on others, as Stephen thought he was, was at least in the full stream of " progressive " thought. And his style, so crystal clear and yet capable of complexity, how much better it was than the involved prolixity of Bentham.

Even in 1900, however, one reviewer drew from Stephen's admiring analysis a judgment of Mill which seems even clearer now that Bentham's work begins to appear in its true light. In the *Athenæum* of December 15, 1900, he commented: " That J. S. Mill, instead of defending his inheritance, virtually surrenders one after another the items which formed it, is a conclusion difficult to resist ". To Stephen, however, Mill's course merely showed his common sense, since Bentham remained for him merely of antiquarian and biographical interest. " The writings," he says (I, 236), " in which Bentham deals explicitly with the general principles of Ethics would hardly entitle him to a higher position than that of a disciple of Hume without Hume's subtlety; or of Paley without Paley's singular gift of exposition ".

Now David Baumgardt, professor of philosophy at Berlin until Hitler, and one of the subtlest masters of distinctions and differences among philosophers, began some years ago a history of ethics, in which Bentham was to have a brief chapter. The chapter grew into a huge column, recently published as *Bentham and the Ethics of Today* (Princeton University Press, 1952). Even on the score of exposition, Baumgardt finds Bentham's method suited to his matter. " What Bentham's hedonism lost by its juristic diction," he says (p. 543), " it gained in precision and in a closer approach to the hard realities of life. It was never his intention to degrade moral behaviour to the lower level of mere legalism; he endeavoured to elevate the theory of morals, as far as possible, to the higher level of juristic exactness ". In the conclusion, Baumgardt, originally a " high Kantianer ", says with words carefully weighed, " Only on the basis of these critical reflections can it be shown why our Judæo-Christian motives are good and not the motives of sheer power or any type of ethical relativism and nihilism ". Clearly, the stone discarded by the apostles of " progress " and " evolution " can still be used as a foundation.

The pragmatic climate of 1900 made it almost compulsory for one to admire success. Not only was Mill, as Stephen says, " unsurpassable as an interpreter between the abstract philosopher and the man of common sense ", but he was also successful, as neither his father nor Bentham had been, in becoming a man of authority. " He had become the most prominent of English thinkers; the political liberals referred to him as the soundest expounder of their principles; and even in the English universities, the strongholds in his youth of all ancient prejudices, he had probably more followers than any other teacher " (III, p. 2). If the quaint and whimsical Bentham shows signs of outliving his brilliant successors, it may be because a knotty and difficult style may correspond to problems that are knotty and difficult.

J. S. Mill has become a classic writer, and so has Leslie Stephen, but it remains for each generation to sift its classics, and to choose from them the elements suitable to its own life.

C. W. EVERETT.

British Public Finances: Their Structure and Development, 1880—1952. By URSULA K. HICKS. Home University Library. (Geoffrey Cumberlege.) Oxford University Press. viii + 225 pp. 1954. 6s.

This book contains much useful information concerning British Public Finance since 1880. This starting date keeps Mr. Gladstone well in the picture. Before the finish both Mr. Gaitskell and Mr. Butler make brief appearances, the latter more as the author of the Butler Education Act of 1944 than as Chancellor of the Exchequer. And I am quite embarrassed by the large number of references to myself.[1] The arrangement of the book is unusual, but not inconvenient. There is no one best way to lay out Public Finance.

The first of Mrs. Hicks' six chapters[2] sketches the growth of the Public Authorities in Britain. The tale told here begins long before 1880. It gives a prominent place to changes in the form and functions of local, as well as central, government, and merges into an account of the growth of the public sector, including both social services and public boards. This chapter contains some interesting statistical comparisons, but ends awkwardly, from the point of view of arrangement, with some reflections, which would come better in Chapter III, on the supposed disincentive effects of our present income tax. And these reflections themselves may need amendment in the light of the recent encouraging Report of the Royal Commission on Income and Profits Taxation.

The second chapter discusses the Forms of Public Expenditure, and again brings out some interesting figures. The Beveridge Report naturally comes in here. Mrs. Hicks says that " the implementation of the spirit, though not of the detail ", of this programme " was carried out hurriedly in a series of important Acts in the first flush of victory ". As one of those principally responsible for this tempo, I would say, not " hurriedly ", but " without delay ", or, in the words of my third budget speech, " without halt or hesitation ". Had these good deeds not been done " in the first flush of victory ", I doubt if they would have been done yet. Mrs. Hicks also regrets that " contrary to the Beveridge proposals, increased pensions were made available immediately ". Beveridge had proposed to put the old people at the back of his queue of beneficiaries, and only to move them up slowly over a period of twenty years. This proposal was an extreme example of political innocence, or, some would say, of political imbecility. It would not have survived an hour in Parliament or in any public meeting. The increasing proportion of old people is a grim social and political fact, and public opinion, in which the opinion of the old people themselves is an ever increasing element, demands that they shall stand much nearer to the front of the queue than to the back. But there is, I think and hope, increasing agreement that they should, for their own happiness as well as for the nation's good, be encouraged to continue working, when they can, beyond the present retiring ages. There must, however, be strong safeguards against stagnation for the not-so-old. I have also suggested in Parliament that, to do something to equalise political pressures and prevent politicians from forgetting the children, an extra vote should be given to one or other of its parents for every child, or young person below voting age. But this suggestion has not yet received much welcome anywhere.

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[1] I get no less than 17 mentions, including two which the Indexer missed. Mr. Gladstone gets 8, Sir Winston Churchill 3, and Sir Stafford Cripps 2. The following get 1 each: Mr. Butler (as Chancellor), Mr. Gaitskell, Mr. Goschen, Sir William Harcourt, Mr. Lloyd George, Sir Robert Peel, William Pitt the Younger, and Mr. Snowden. Mr. Asquith gets two, on page 5 and page 143, though the Indexer missed them both, and Mrs. Hicks is wrong in the second mention in saying that Mr. Asquith " introduced supertax in 1909 ". That was Mr. Lloyd George's great year. But on many notable Chancellors within her period—including Anderson, Baldwin, two Chamberlains (Austen and Neville), Hicks Beach, Horne, Kingsley Wood and Simon—Mrs. Hicks has no comment. I doubt if this is quite fair shares.

[2] These average between thirty and forty pages, with no breaks. For the next edition I advise numbered sections, with a corresponding analytical table of contents.

Mrs. Hicks is not sympathetic to general food subsidies, to special help for farmers, to rent restriction, or to the current levels of housing expenditure. Whatever the final balance of the argument, there are, in all these cases, considerations on the other side to which I do not think she gives sufficient weight.

Chapter III on the Adjustment of the Tax Structure seems more hastily written than the rest of the book and says less that is fresh. It is not true that " between 1945 and 1950 the minimum (standard rate of income tax) was 9/6 ". I reduced it from 10/– to 9/– in my first budget in the autumn of 1945, and it stayed at 9/– till 1951, though substantial reliefs were given in many other determinants of income tax during this period. Mrs. Hicks and I do not agree about profits tax. I should regard it as most retrograde, especially as regards distribution, to repeal it and make good the loss of revenue, as she suggests (p. 88), by increasing the standard rate of income tax. And I attach much value to the differential, which I introduced in 1947, in favour of undistributed, as against distributed, profits. I would like to see this widened still further. Mrs. Hicks' argument against this differential, that it discourages firms from ever distributing more than their total net profits, " as is often desirable in the interests of dividend stabilisation ", seems to me a strong argument the other way. It is wise to penalise attempts to stabilise dividends by such methods.

I share her scepticism as to the practicability of a general expenditure tax, to replace the income tax. But the administrative difficulties would be least, as in other cases, if it was limited, in the first instance, to a small number of the largest contributors. And such an experiment might be worth making. But I do not share her certitude that " the effectiveness of death duties, at their present rates, in redistributing wealth and income will soon become obvious to all ". So far the ineffectiveness of death duties seriously to diminish inequality has been one of the economic miracles of our time. They have done little more than prevent inequality from increasing.[1] I hope that the increases in death duties on large estates, and the reductions on small, made by me in 1946 and 1947, and the further increases on large estates made by Sir Stafford

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[1] Miss K. Langley's figures in the *Oxford Bulletin of Statistics* for 1951 are well known. In England and Wales two-thirds of the privately owned wealth belonged to 1 per cent. of adults just before the first World War, to 2 per cent. just before the second, and to 3 per cent. just after it. A pretty slow march towards a greater equality of fortunes !

Cripps in 1949, will be quicker and better equalisers than the increases made by our predecessors. But only future deaths can show.

Mrs. Hicks' fourth chapter on Local Government in the Fiscal System gives an account of the evolution of the local rate, and of exchequer grants in aid of local revenues. She is not unfavourable to the present Exchequer Equalisation Grant, invented and approved while I was at the Treasury. The simplest way of describing this is to say that, to all authorities whose rateable value per head is below the national average, the Treasury grants additional (notional) rateable value sufficient to bring it up to the national average, and then pays whatever the local rate may be on this addition. Since a grant is a negative tax, and a benefit a negative burden, there is here a formula for maximum benefit to local authorities, not unlike that for minimum sacrifice to taxpayers as conceived by Edgeworth. This is, I think, the closest approach yet made to distribution according to ability to receive. It will, of course, be closer still when the long delayed uniform valuation takes effect.

The fifth chapter on Budget Balance and National Balance spends some time on the history of Treasury and Parliamentary control of expenditure. (But it is not true, as stated on p. 148, that " the Select Committee on the Estimates " was " established in 1946 ". I sat on it in 1925–6.) We then pass to the theory and practice of the " balanced budget ", with an unfavourable comment on the " unequalled ingenuity displayed " by Winston Churchill, when Chancellor, " in producing a balanced budget out of what was on any reasonable reckoning a deficit ", and thence, through the troubles of 1931, to the gradual acceptance of Keynes' view of the Budget as a stabilising element in the National Economy. All this is familiar, but the last few pages of this chapter, when Mrs. Hicks discusses " the new social accounting technique ", will not be intelligible, as they stand, to many readers.

In her last and longest chapter, of forty-three pages, on Loan Finance and Debt Management, I soon find myself very much involved. I am pleased that Mrs. Hicks finds what she calls " the Dalton era ", from the autumn of 1945 to the autumn of 1947, " by far the most interesting years ", from the point of view of this chapter, of the period 1931 to 1951. I am sorry, on the other hand, that she thinks that " the Dalton experiment . . . ended in complete failure ". In the new edition of my *Principles of Public Finance* I explain the theory on which my cheap money policy was based, and discuss some of the practical problems which arose from it. But, thus challenged here, I must reply briefly. My general aims in seeking to drive down interest rates were, to economise on the national debt charge, to improve the distribution of income, to cheapen investment and to make sure of full employment. (It would have been quite easy for a doctrinaire deflationist to recreate in 1945 the heavy unemployment which followed the first World War.) I had also some particular aims, notably to cheapen the cost of local authorities', and especially of " blitzed cities'," housing and reconstruction programmes, and to cheapen the cost of the government's nationalisation programme.

As to the savings achieved, my reduction in short-term rates alone saved some £30 millions a year, an economy maintained by Sir Stafford Cripps and Mr. Gaitskell until 1951, when Mr. Butler let it go. This annual saving was as large, in absolute monetary terms, as that achieved by the Great Conversion (Mrs. Hicks' capitals) of 1932, though not, of course, either in real terms or in proportion to the now much larger debt charge. There were also further considerable savings through cheaper money, both on conversions and new issues, to the central government, to the local authorities and to private enterprise, many industrialists greatly easing their position by reducing interest rates on their prior charges. And all these totals of annual savings, on medium and long-term loans, would have grown steadily, had the cheap-money policy been longer maintained.

In theory, the cheap-money policy was not necessarily inflationary, though it carried an inflationary risk. In practice, in the actual conditions of 1945–7, it was hardly inflationary at all. In this judgment some of my most distinguished academic critics concur. And, even if it had *some* inflationary effect, this could have been, and was, smothered by the disinflationary effects of my tax increases in 1947.

Finally, what prevented me from holding the long-term rate at 2½ per cent. ? 1947 was a most troublesome year, with first a fuel crisis and then a convertibility crisis, neither of which could have been prevented by dearer money. But my answer to this question is that the Treasury had no legal power of direction of capital into the gilt-edged market. Given this power, in an appropriate form, 2½ per cent. could have been held, even in 1947. Some future Chancellor should arm himself with this power, a new gun specially designed to shoot bears.

HUGH DALTON.

Britain in the World Economy. By SIR DENNIS H. ROBERTSON. George Allen & Unwin Ltd. 1954. 91 pp. 7s. 6d.

This delightful little book contains four lectures delivered at the University of Virginia in March 1953 to an audience that was largely non-specialist. It is hard to imagine a more lucid introduction to the subject.

The first lecture on " The Mother Country " is mostly about capital investment in Britain since the war—its extent, its distribution and the methods by which it has been financed. There follows a beautiful little lecture on the Sterling Area; what it is, its pros and cons. In the third and fourth lectures, on " Dollar Shortage " and " Discrimination ", Professor Robertson, while demolishing some nonsense theories of chronic dollar shortage, shows that the problem may well have " long-run or at least recurrent elements as well as purely temporary ones ". He is, therefore, by no means sure that " the day of complete and irreversible non-discrimination is much, if any, nearer than the day of complete free trade ". One of his analogies may well become a classic (whether or not the argument it is intended to illustrate is substantiated), and the reviewer may perhaps be excused for quoting it in full:—

> " The simple fellow who, to the advantage of both, has been earning a living by cooking the dinner for a busy and prosperous scientist wakes up one day to find that his master has invented a completely automatic cooker, and that if he wants to remain a member of the household he must turn shoeblack. He acquires a kit and learns the technique, only to find that his master has invented a dust-repelling shoe, but would nevertheless be graciously willing for him to remain on and empty the trash-bins. Would he not do better to remove himself from the orbit of the great man, and cultivate his own back garden ? And if he can find some other simple fellows in the same case with whom to gang up and practise the division of labour on a less bewildering basis, so much

> the better for him. Such, it is urged, has become the position of the rest of the free world *vis-à-vis* the United States ".

Professor Robertson's analyses of controversial problems, and especially those of the Sterling Area, Imperial Preference and European Integration, are so fair, so frank and so friendly that they can hardly fail to promote international understanding and to remove some of the prejudices that still persist on both sides of the Atlantic.

It seems likely that the majority of economists who have studied these problems would agree with most of what Professor Robertson has to say, although all will have a few reservations; the reviewer, for example, does not share his opposition to an increase in the dollar price of gold. Some may feel that Professor Robertson's analysis is now out of date in certain respects, and that the experience of the last year or two has shown the dollar problem, in particular, to be less serious and intractable than was formerly imagined. But it would surely be unwise to lay too much store by the favourable developments of so short a period and only prudent to ponder carefully Professor Robertson's analysis of deep-seated phenomena before concluding that his anxieties are ill-founded.

DONALD MACDOUGALL.

The Political Element in Economic Theory. By GUNNAR MYRDAL. Translated by Paul Streeten. Routledge & Kegan Paul. 1953. xvii + 248 pp. 25s.

This book, originally the second of Dr. Myrdal's main works, started as a course of lectures in Stockholm in 1928, was published in Swedish in 1929, and in German in 1932. When read in the middle 30's it seemed to be as outstanding in its way as some of the contemporary Swedish writings on monetary theory. Its thorough and acute scrutiny of the language and postulates of economic theorising about value, " welfare ", and policy, fitted in with the fresh vistas in the logic and philosophy of science opened up by Wittgenstein, the Vienna Circle, and A. J. Ayer's book of 1934. Unlike some of the things enthused over in the 30's this old acquaintance seems to have weathered the years extremely successfully, and, on the whole, Dr. Myrdal's basket of 1929 goods fully retains its value at 1954 prices. Of course, some of the more extreme opponents attacked by Dr. Myrdal have been, if not wiped out, at least driven to the more remote fringes of the field. But the ambiguities of " welfare " economics, ancient and modern, are still very much with us, and this book remains a brilliant and weighty treatment of a theme of perennial significance. As might be grasped from Mr. Streeten's appendix on " Recent Controversies ". Dr. Myrdal's book can be regarded as a kind of historical introduction to Mr. Little's critique of welfare economics,—though an historian would prefer to regard Mr. Little's work as an analytical appendix to Dr. Myrdal's. It is true that Dr. Myrdal rejects interpersonal comparisons of utility, a rejection which Mr. Little sees as mainly verbal and rather pedantic. But this is a pretty trivial point, which has diverted much, too much, attention from the important analysis on which Dr. Myrdal and Mr. Little would agree. If it is rather verbal and pedantic to try to put some kind of veto or taboo on " interpersonal comparisons ", it is dangerously pretentious to imagine that the acceptance of such comparisons opens up some vast range of impressive, significant pronouncements regarding scientifically based economic policies. The acceptance of such comparisons has never been shown to enable anyone to propound any realistic, practically significant, new truth, i.e. one that was not a truism or an unilluminating tautology.

The central thesis which Dr. Myrdal develops and seeks profusely to illustrate from the history of classical and neo-classical theories of value, welfare, and public finance, is that economists' analysis of economic policies has been to a dangerous, deceptive extent shot through with that oscillating ambiguity between the normative and positive moods so prominent in the cruder formulations of utilitarian political philosophy and its Marxistic step-brother. Today, in the discussions of academic economists, such ambiguity can only eke out its obstinate hunted existence beneath the deepest camouflage. " Social welfare," according to Dr. Myrdal, was one of the last of these. More recently the 1984-ish " Newspeak " term " General Ecfare " has been launched. As to such concepts, Dr. Myrdal seems to have argued relevantly in 1929 when he wrote that it is " vain to attempt to isolate a purely economic problem from its political setting. Such an attempt leads either to tautologies or to sheer arbitrariness. . . . The idea that one can judge social policy from a ' purely economic point of view ' is thoroughly metaphysical. It assumes tacitly that there is such a thing as the interest of society as a whole and that particular interests though superficially antagonistic are at heart reconcilable " (pp. 185 and 195). Incidentally, Dr. Myrdal acutely observed, like Acton and others, the affinity with German philosophies of the State which concepts like " social welfare " give to utilitarianly-based brands of economic liberalism: " Liberal utilitarian atomism and the more heterogeneous organic or legalistic German pholosophy of the State are at heart akin. Both use in some form or other an objective political concept with respect to society as a whole, whether it be ' social welfare ' or ' the will of the state ', etc. . . this is their common metaphysical element " (p. 54).

Dr. Myrdal's argument thus implies that it is a vain pretension to suppose that any statement or analysis can be made of, or about, the purely " production " effects on " general welfare " or " ecfare " of an economic policy in isolation from actual or possible " distribution " or other " effects " (or vice versa), which is not, almost certainly, thoroughly unrealistic, or trivial, or tautological. If one pretends to be able to utter anything more than an insignificant kind of tautology, or perhaps an extremely attenuated triviality (e.g. " If x's income increases, and y's income increases, *cet. par.* x's ecfare increases and y's ecfare increases "), then one must weigh one sort of " effect " against other sorts of " effects " (or the possibilities of other sorts of " effects "); and this weighing must be an arbitrary process which it is a deception for an economist to present as some sort of " scientific " or " neutral " computation of general " welfare " or " ecfare ". Sidgwick long ago saw how thin such static abstractions are, when they are qualified as they have to be qualified to be brought anywhere near reality (for example that " *Ceteris paribus* equality of distribution will generate maximum general ecfare "). It is unnecessary and impossible to try and ban or veto such statements but highly desirable to demonstrate how insignificant is their realistic, applicable content, when all their ambiguity is wrung out of them. Apropos of Sidgwick, Dr. Myrdal might perhaps have brought out that, in spite of their hedonistic terminology, the great first-generation neo-classicals, Jevons, Sidgwick, and Marshall, seem to have had a much more cautious and realistic grasp of the relation of economic analysis to policy, both than many of their naively confident classical predecessors, *and* than their more specialised successors, who seem to have attached quite exaggerated "fruit-bearing" significance to insufficiently defined concepts like "social welfare", or, alternatively, to the hyper-precise elaboration of the abstract mathematical conditions for a social optimum.

Dr. Myrdal's message is that those discussing economic policies ought to formulate their statements or analysis with far more precision and particularity as to the diverse "effects" of policies, than is possible in terms of general "ecfare", "socfare", and the rest of the hermaphrodite progeny of *ersatz* ethics and pseudo-scientific jargon. Dr. Myrdal was, therefore, not trying to rule out as illegitimate, or "taboo", any particular field of economic investigation, but was simply suggesting that more lucidity and precision and less verbal pretentiousness was a professional duty for the economist.

In addition to its general thesis about the political element in economic theory this book contains many valuable contributions to the history of value and welfare theories, which it ought to be possible to appreciate even if one does not wholly accept Dr. Myrdal's main arguments. Admittedly Dr. Myrdal's approach may be found to be a little eccentric or unsound. For he did not regard the main function of his historical survey as that of concocting a stainless intellectual pedigree for a particular brand of politico-economic orthodoxy; nor as that of defending *ad absurdum* the intellectual vested interests of a particular "school", or some particular individual predecessor in the interpretation of whom he could stake out a monopoly—Cassel or Wicksell, Marshall, Marx, or J. S. Mill. In fact Dr. Myrdal went so far as to disapprove of attempts "usually made by neo-classical authors who try to defend the classics on all fronts. Such attempts are well-meant but misconceived and dangerous. We are not yet sufficiently free from dogmatism to be able to dispense with an honest and thorough criticism of the masters" (p. 114). Nevertheless, it would be impossible to find in any other single book (except perhaps Schumpeter's recently published *History*) such lucid and penetrating critiques of the value theories of Smith, Ricardo, and Jevons, along with an excellent chapter on theories of public finance from J. Mill to Pigou. Here we might mention one point of detail: that is, that James Mill did not by any means always stand for "unqualified proportionality" in taxation (p. 170). At one point, at least, he clearly recognised the argument for progression deducible from the Benthamite principle of the diminishing marginal utility of income. On this question the father seems, on the whole, to have been strikingly more "advanced" than the son, in spite of the latter's support—recognised by Dr. Myrdal (p. 171)—for very drastic death duties.

Mr. Paul Streeten has efficiently performed a most valuable service by making this book at last available to English readers and by adding his very useful appendix on recent controversies.

T. W. HUTCHISON

The Structure of American Economy, 1919—1939. By W. W. LEONTIEF. 2nd ed. Oxford University Press, New York. 1951. xxviii + 264 pp. 35s.

Professor Leontief's earliest studies on the structure of the American economy, published in 1936 and 1937, contributed to economics in two important respects: first, he has prepared tables describing transactions between different sectors of the economy, distinguishing 41 industries; second, he has used the empirical data to create a statistical analogue to a model of general equilibrium. Since then Professor Leontief's approach has exercised a wide and growing influence over both theoretical and empirical research. Not only have numerous academic investigations been made into the mathematical, statistical and economic properties of his system, but governments were also persuaded to devote resources to the preparation of two-way tables showing transactions between anything from 20 to 200 sectors of the economy. Today—as was made clear at a conference on this subject held by the University of Pisa in the summer of 1954—official statisticians in the United States, six Western European countries and Japan are actively engaged in this type of research.

Professor Leontief, in his first sentence, recalls Quesnay's *Tableau Economique*. Cannan's dictum—" The veneration with which Quesnay's disciples regarded the Table far exceeded that which the Israelites displayed for the tables of stone which Moses brought down from Sinai " (E. Cannan, *A Review of Economic Theory*, p. 33.) may be equally applied to the new Table which is this time based on empirical data.

Professor Leontief's system contains three sets of variables: the pattern of final output, the pattern of industrial activity, and the matrix of technical coefficients (i.e. inputs per unit of output). These three sets of variables are interdependent and their relationship at a particular moment can be exhibited by a two-way table which may also be regarded as a more detailed form of the usual social accounts.

The model may be employed to answer three types of question: (i) Given the state of technology, what happens to the pattern of industrial activity when the pattern of final output changes (or vice versa) ? (ii) Given the state of technology, what happens to wages and other incomes earned in different industries when prices change (or vice versa) ? (iii) What happens to the pattern of activity, to prices, wages and consumption when technology (i.e. productivity of labour or efficiency in the consumption of raw materials) changes ?

These questions are answered by introducing four simplifying assumptions. First, commodities and industrial activities are grouped into a limited number of categories and these categories are treated as if they were homogeneous. Second, a given state of technology is represented by constant technical coefficients (i.e. linear production functions with no economies of scale). Third (by implication), for a given industry percentage profit margins do not vary with the scale of activity. And fourth, the volume of household consumption of any given category of commodities moves proportionately to changes in real income.

Such limitations are acceptable only in relation to the major aim of the model, namely the investigation of structural changes in the economy as a whole. It is outside the purposes of the model to deal with factors determining the level of total activity, or to go into sufficient detail to be applicable to narrowly defined industries; these problems are better dealt with respectively by Keynesian analysis and by mathematical programming.

Two-thirds of the book under review consists of a reprint of the 1941 edition (which in turn incorporated the articles published in 1936 and 1937) and is based on data for 1919 and 1929 only. The rest of the book consists of reprints of three articles, published in 1944 and 1946, and of an address delivered in 1949, and uses data for 1939 also. This arrangement gives a good insight into the development of Professor Leontief's thought over more than a decade but as an exposition it fails to do justice to his theory, his methods of research, and his findings.

It is a drawback of the book that the first and second types of questions, which are the easiest, are not answered until its last third which reproduces the articles published in 1944 and 1946. The central part of the book attempts to answer the third type of question which is the most difficult. Here changes between 1919 and 1920 are analysed in terms of 10 sectors. The essence of the method is to derive mathematical formulæ which lead to a short cut in the computations. With the use of electronic computing machines, which have become available since this part was first published, it should have been possible to carry out the computations in terms of a larger number of sectors as the required data are already available in the book. Also, the various derived mathematical formulæ, which the general reader must find difficult to follow, would have become superfluous by direct machine computations.

One outstanding defect of the basic data is that inputs refer not to the current consumption of commodities necessary for the achievement of a given output but also include capital items, that is, increment in stocks and purchases of equipment. A proper commodity flow table, for 1939, is contained only in the chapters which were first published in 1946. To overcome the difficulty, Professor Leontief has introduced investment and savings coefficients which have little significance for the type of equilibrium analysis which is his chief interest, and the discussion around these coefficients takes up considerable space. The connexion between investment and output in one particular industry in one particular year is not technological. To construct a dynamic model of the technological side of the economy one has to compute stock coefficients (i.e. capital-output ratios) which were investigated by Professor Leontief only in a more recently published volume.

T. BARNA.

Economic Doctrine and Method. By J. A. SCHUMPETER. Translated by R. Aris. Allen & Unwin. 1954. 207 pp. 15s.

For many years, capable and mature students who wanted to get a general grasp of the history of economic thought have been advised: " Of course, if you know German, *the* book is Schumpeter's *Epochen der Dogmen und Methodengeschichte* ". The conditional clause as to the knowledge of German can now be omitted, but it must still be emphasised that this book is not for a beginner and calls for a good deal of intellectual equipment. Schumpeter writes very allusively and is concerned to elucidate and interpret, on the assumption that quite a lot of, or about, the leading texts is known to the reader. It would be interesting to try to trace any changes of view or evaluation, as between this survey of forty years ago and Schumpeter's final *magnum opus*, the *History of Economic Analysis*. In the main outline of the story there seem to be very few such changes, except perhaps that in the later work Schumpeter seems to shift the balance considerably in favour of the great pre-Smithian writers of the late 17th and earlier 18th centuries, as compared with their classical successors.

We cannot quite agree with a stimulating review in the *Times Educational Supplement* that the book " is quite adequately translated ". No doubt the translation of Schumpeter is often an extremely difficult task, only quite satisfactorily performable by Schumpeter himself, and not invariably by him. But here there really do seem to be too many sentences deficient in lucidity, precision, idiom, or economy, which one has to read two or three times in order to grope one's ways to a fairly simple meaning. It is more serious when we are given a nonsensical sentence, or something like the exact opposite of what Schumpeter wrote, as happens at p. 98, line 33, and at p. 182, line 25. Furthermore, there are a good many slips in names and dates for a comparatively short book. Some of these were in Schumpeter's original, but, instead of these being removed, far more have been added. N. Barbon on his three appearances here (including the index) is called N. Barber. Sir James Steuart is sometimes spelled correctly and sometimes spelled " Stewart ", with the result that on p. 110 he may be (and in the index actually is) confused with Dugald Stewart. On p. 21, 1761 should be 1746; on p. 143, 1886 should be 1866; on p. 182, an 1884 should be 1844, and the *Journal of the Royal Statistical Society* should read, the " Report of the British Association "; while in the same paragraph we have the unidiomatic and misleading term " the sixth (or eighth) decade " for the 60's (or 80's). On p. 77 the nineteenth century American E. Peshine Smith gets bisected into two separate economists Peshine and Smith. These and other slips, together with the style of the translation, raise appreciably the margin of difficulty of the book, and it is to be hoped that there will be a second edition which will be very thoroughly revised.

T. W. HUTCHISON.

Economic Change: Selected Essays in Business Cycles, National Income and Economic Growth. By SIMON KUZNETS. Heinemann. 1954. viii + 333 pp. 15s.

This is a book which the general reader as well as the specialist will find of absorbing interest. The papers brought together, some of them written over twenty years ago, have a direct bearing on problems of economic growth which have recently attracted so much attention. The author has deliberately included only those essays which expound ideas; technical work on statistics and methodology has been omitted. In three fields of inquiry—business cycles, national income and economic growth—the achievements of Professor Kuznets have been massive and unique.

It is instructive to be reminded of the scope of cyclical analysis before the influence of Keynes' *General Theory* became paramount. Kuznets' study of " the relation between capital goods and finished products in the business cycle ", first published in 1934, remains one of the few indispensable contributions to the subject. He argued convincingly that the principle of acceleration cannot supply a self-sufficient basis for cycle theory; its rôle can be only the modest one of furnishing one of the factors making for secular over-capacity of durable capital goods. The author also found much to criticize in Schumpeter's *Business Cycles*: the formal statistical analysis in that work seemed to him to be too slender to support the elaborate superstructure, and there was a " failure to forge the necessary links between the primary factors and concepts (entrepreneur, innovation, equilibrium line) and the observable cyclical fluctuations in economic activity ". But the treatise received high praise for the new horizons which it opened up and for its stress on the cycle as part of the process of economic growth.

At a time when so much is being written about " under-developed countries ", it is a relief to turn to the cool wisdom of Kuznets' observations on the international comparison of income levels. No one is more keenly aware than the master craftsman himself of the limitations of statistical tools. We are warned that income estimates for non-industrialised countries leave out important non-market items, while those for developed countries embody occupational expenses and costs of urban civilisation. Another point that needs to be more widely appreciated is that, " in explaining *long-term* international differences in levels of income, the relative supply of irreproducible resources is not a dominating factor ".

These essays show Kuznets' consistent endeavour over the last twenty-five years to throw light on the mechanism of economic change. He is a true scientist, always conscious of the need for the right interplay of the abstract and the empirical; and no one has done more to prepare the ground for a theory of economic growth. It is to be hoped that he will crown his achievements by producing this theory.

BRINLEY THOMAS.

A Study in the Theory of Economic Evolution. By T. HAAVELMO. North-Holland Publishing Co., Amsterdam. 1954. viii + 114 pp.

Most economists are at one time or another fascinated by what Professor Baumol has called " Magnificent Dynamics ". It is, however, by no means certain whether any single person is capable of making any deep impression on these vast problems. Such a person would have to have an enormous knowledge of the past and a concept of numerous disciplines and would have to be a genius into the bargain. Failing these qualifications, the economist can hope to do no more than to provide suggestive ideas and methods of procedure drawn from his own discipline, and hope that these will be found useful at a later stage when some sort of inter-disciplinary and collective assault on these problems seems possible.

Professor Haavelmo is fully aware of these limitations. His short book is intended to show how differences in the development of different economic regions might, to some extent at least, be explained on the basis of relatively simple mathematical models. He does not claim to have provided a full " explanation " of such differences and his work may be regarded as an essay in method rather than an attempt to provide a complete and rigorous theory. The argument of this book can be summarised briefly as follows:—If a theory of development is capable of being expressed in some system of exact differential and/or difference equations, and if this system possesses a solution, then the latter will be defined in terms of the ' structural parameters ' and past history (' initial conditions ') of the region to which the equations apply. The structural parameters describe such things as natural resources, ability to learn and work, willingness to save and invest, etc., etc. If the structural parameters and/or initial conditions of two regions differ, even slightly, then the development of the variables we are interested in may differ widely in the two regions, especially if the time span investigated is long. This simply says that if we have a theory of economic development which can be stated in the mathematical language customarily employed in these problems, then there would be little difficulty in accounting for regional differences.

But we may not like to assume that groups in different regions are in some fundamental way distinct (differences in structural parameters), nor may we like to leave some of the initial conditions (past history) unexplained. After all there are regions with similar natural resources and wide differences in economic development, and not all of us are willing to say with Professor Rostow that this must be imputed to some fundamental differences in the propensities to invest, save, innovate, learn, reproduce, etc., of the peoples of these regions. Moreover, to hope for an exact model of economic development is distinctly ambitious.

Professor Haavelmo, with these sentiments on his lips, therefore turns his attention to stochastic models. These are simple ordinary differential or difference equation models with an error term (with zero mean and constant variance in this case) added. A number of such models are investigated, but do little more than demonstrate what we had suspected, namely that any stochastic process is compatible with numerous actual developments of the variables we are interested in. If the propensity to save in any one period is 5 if heads come up and 1 if tails, the actual income of a region may take on widely different values. Thus if all regions have similar initial conditions and structural parameters, their economic development may differ widely. Whether one regards this as an " explanation " of differences in development or not, is a matter of taste. As Professor Haavelmo rather sadly remarks: " It is almost too easy to find ' explanations ' in this direction ".

Next we are presented with a model of " inter-regional relations " which is distinguished by the ingenuity of its construction. Regions are said to have " input capacities " which in some general way measure the amount they could contribute to the production of world output. The latter is related by a " global production function " to those input capacities of the various regions which are directed to production. Some part of these input capacities of the region, however, is directed to " non-productive " activities designed to increase a region's share of the global product. There are also two " allotment functions " which show what part of the global product a region obtains as a function of the productive or unproductive activities of the regions, respectively, and finally there are " conjectural response and countermeasure functions " which explain themselves. All these functions are used to show that international agreements may be beneficial to each region, " that the relative position of the regions may depend essentially on the fact that the regions are in mutual contact ", and that contact need not make for uniformity.

Lastly we are given a short mathematico-philosophical note on the problem of freewill and deterministic models. The gist here is that behaviour parameters should be regarded as functions of time.

Most of the mathematical points are amply illustrated by a number of models, which, however, do not add a great deal in themselves. The acquisition and use of knowledge is treated in a rather unsophisticated way and is not allowed (except in the most general discussion) to influence the form of the production function. Unemployment is ignored on the grounds that it is a relatively short-run phenomenon which would sound odd to Italians and others. There is, in fact, very little detailed discussion of most of the functional forms which are postulated for the various models.

Mathematical models are like Picasso paintings—they look easier to imitate than they are. Professor Haavelmo obviously belongs to the virtuosi and there are not many who could imitate him. But the main points of the book are too obvious to mathematical readers and the presentation too difficult for non-mathematical ones to make one feel happy with this work. As a contribution to the theory of development it is rather disappointing.

F. H. HAHN.

L'Intégration Economique: *Solution de la Crise de l'Europe*? By DUŠAN LUKAČ. Librairie E. Droz, Geneva. 1953. 175 pp. S. Fr. 10.

Mr. Lukač seeks in this book to examine the fundamental reasons for Western Europe's economic difficulties and how far they could be resolved by some sort of " economic integration ". In doing so he reviews the attempts which have been made to launch one or other kind of " integration "—notably the Customs Union Study Group, the formation and progress of Benelux, the work of O.E.E.C. on the liberalisation of European trade and payments, and the European Coal and Steel Community—and examines the reasons why some never got beyond the discussion stage and none has had more than a limited success.

In a sense the book goes over well cultivated territory, without throwing up anything startlingly new. But it is decidedly useful to have it all brought together into a single compact volume, and the subject is handled with the clarity and orderliness of a good Latin mind. Western Europe's fundamental problems are shown as arising from the difficulty for a densely populated continent to obtain the necessary primary products by means of exports (visible and invisible)—a difficulty which was in any case growing as other countries became more industrialised, frequently behind tariffs, but which was suddenly intensified by the war and the Iron Curtain. The nature of the dollar problem is also discussed and it is put in its proper place as something which is not so much a problem for Europe as for the United States and the World. The " solutions " may be crudely summarised as the adaptation by European countries of their pattern of production to fit in with the post-war demands of the world market, coupled with a " good creditor policy " by the United States.

Perhaps most interesting is the analysis of European " integration " in relation to this. Again a crude Anglo-Saxon summary cannot do justice to the elegance of the treatment, but this is roughly what emerges. The European countries were not prepared to adopt a full-blown economic union, which in any case would not work properly without a large measure of political federation (see page 82 for the problem of *one* economy with *several centres*). Such a half-way house as a Customs Union would deprive the individual governments of powers which seem to them essential to the responsibilities which now fall on governments—notably full employment—and it would only work if the members moved rapidly towards full economic union. And even if, *per impossibile*, it were adopted it would contribute little to a solution of Europe's fundamental economic problem: there is no magic in such a formula which can balance Europe's payments with the rest of the world or the dollar area.

This last point will carry conviction to many who do not quite accept the logic of the argument that all forms of increased integration are impossible because they " require " further steps which sovereign nations will not take. But Mr. Lukač would have given a more rounded picture if he had described the *other* advantages, in the shape of higher real incomes, which can be secured (for example) by a mutual agreement to reduce barriers to intra-European trade and payments.

W. B. Reddaway.

Soviet National Income and Product in 1937. By Abram Bergson. Columbia University Press. 1953. viii + 156 pp. $3·75.

In this book Mr. Bergson attempts to produce an outline of the national accounts for the U.S.S.R. for 1937, measured first in roubles at market prices and secondly in roubles at " adjusted factor cost ". He compares the results with those produced by others (notably Clark and Wyler) expressed in dollars, and comments on the purposes for which they are superior.

First, Mr. Bergson has to deal with two preliminary questions. Do the published Soviet figures really correspond with the facts, or are they simply invented for propaganda purposes ? And secondly, even if accurate, do they furnish a basis for meaningful national accounts ?

On the first he seems to me to establish a good presumption that Soviet statistics are based on real records. They are often manipulated into deceptive forms (e.g. in making index-numbers), and omissions are in no sense random (but rather calculated to distort the impression), and doubtless human failings produce inaccuracies in the U.S.S.R. as they do elsewhere: but they are not simply the result of " double book-keeping ".

The second issue is more tricky, but the great majority of Soviet " enterprises " do in fact have independent finances in the same sort of way as nationalised industries do in this country, and especially in 1937 (the year chosen for study) there was a considerable degree of freedom in the markets which are most important for this purpose—notably the labour market and the consumer goods market. The main point which has to be watched is the same as in other countries—the influence of the high, and varied, rates of indirect taxation on most goods. There are also certain complications in relation to agricultural products, where the collective farms were charged no rent for their land but had to make certain deliveries of produce to the State at specially low prices—the amounts varying from farm to farm in some relation to fertility, etc., but not at all an exact one.

Mr. Bergson considers at some length how far the figures at market prices need to be adjusted to take account of such peculiarities and make them more suitable for problems of " welfare " or " productivity " or " use of resources ". His " adjusted factor cost standard " starts with elaborate criteria, but ends by demanding little beyond the elimination of indirect taxation and subsidies on more or less familiar lines.

As to the *usefulness* of such " rouble " calculations, rather than valuations in terms of (say) dollars, Mr. Bergson makes the very real point that dollar valuations will not give at all a meaningful answer to such questions as " what proportion of their resources did the Russians devote to investment, consumption or defence ? " If, as seems to emerge, their prices of machinery, etc., in terms of adjusted factor cost, were much higher in relation to those of consumer goods than was the case in the United States, then "dollar" calculations will show too low a proportion of resources used for investment. He might perhaps have added, however, that dollar computations do give the user *some* idea of how large investment, etc., were in the U.S.S.R. (either per head or in total)—a task which his estimates do not attempt to fulfil.

W. B. REDDAWAY.

American Foreign Assistance. By W. ADAMS BROWN, Jr. and REDVERS OPIE. Brookings Institution, Washington, D.C. 1954. xii + 615 pp. $6·00.

Between 1941 and 1952 the United States provided no less than $90 billion in grants and loans to other countries through "lend-lease", post-war relief, "Marshall aid" and military aid under the Mutual Security Programme. Professors Brown and Opie trace the legislative and administrative history of each programme in considerable detail. This part of the book makes long and difficult reading, especially for those who are not too familiar with American political institutions. It is, however, a fascinating study of the relationship between opinion and policy in a democracy which finds itself suddenly confronted with great dangers and vast new responsibilities. When the story is read as a whole the delays and frustrations created by ignorance and vested interests fall into their true perspective, and the thing which stands out is the vision and constancy of purpose of the leaders of American opinion during these critical years. These qualities have had their reward in developing in the ordinary citizen a quite remarkable awakening to the importance of international affairs.

The authors base their analysis of American policy on the realistic premise that assistance should be based on enlightened self-interest, and should be directed towards objectives which are common to the United States and to the countries receiving aid. They emphatically reject the view that "the United States should assist the economically backward or underdeveloped countries merely because it is better off than they are". On the other hand their interpretation of American self-interest is a very broad and generous one, and they make a number of criticisms of American policy for taking too narrow a view (e.g. the reluctance to allow lend-lease or Marshall aid to be used for the building up of reserves, though adequate reserves are essential to the common objective of convertible currencies). The authors are concerned with the problem of reconciling sectional interests in the United States with the general interest which the United States has in common with the assisted countries (e.g. the requirement that fifty per cent. of Marshall aid goods should be carried in American ships). They rightly point out, however, that the Administration consistently opposed amendments inspired by sectional interests, and that it usually won in the end. Other important issues which are discussed in a very stimulating manner are the desirability of European integration and the problem of using aid as an instrument of American policy while avoiding interference in the internal affairs of the assisted countries. On this last, as on other points, the authors take a very generous view of the rights and susceptibilities of other nations.

This is a book which deserves to be widely read on both sides of the Atlantic and which could do much to improve understanding. The English reader is left with an impression of honest and penetrating self-criticism, combining realism with generosity, and never hesitating to expose inconsistencies and shortcomings in American policy. One wonders whether the American reader will get a sufficiently vivid impression of the enormous benefits which American aid has brought to the rest of the free world, but perhaps it would be appropriate that this part of the story should be told more fully by an economist on this side of the Atlantic.

E. VICTOR MORGAN.

Towards the Rescue of Sterling. By R. G. HAWTREY. Longmans. 1954. ix + 159 pp. 12s. 6d.

Mr. Hawtrey has been an unwavering supporter of a flexible Bank rate and has always maintained that it was through changes in stocks that Bank rate operated both on the level of domestic activity and on the foreign balance. The history of the last few years has lent much support to these views, and it is not surprising to find Mr. Hawtrey restating them here. The theoretical framework follows the lines with which he has made us familiar, but he has added some interesting statistical illustrations compiled from the national income and balance of payments White Papers.

According to Mr. Hawtrey's diagnosis the root of the balance of payments trouble is " over-spending " made possible by the existence or creation of " redundant money ", and leading to " over-employment " and to inability of exporters to fulfil orders, even though these are available on profitable terms. Mr. Hawtrey believes that this, and not any disparity between British and American costs, was the cause of the weakness of sterling in 1949, and so he naturally regards the devaluation of that year as a mistake. He apparently believes the same evils to have been present when he was writing towards the end of 1953. There is no doubt that both over-employment and redundant money have existed at various times since the war and that they have done great harm, but I am not convinced that they existed at the end of 1953, or that there was no significant difference between British and American costs (for goods in which the two countries were competing) in 1949.

Mr. Hawtrey finds another source of trouble in the lack of any stable standard of value, since he maintains that the " wealth value " of gold now depends on that of the dollar, which is anything but stable. His solution to this problem is that Great Britain should keep the value of the pound stable in terms of human effort, i.e. that monetary policy should aim at the maintenance of a stable wage level. The money supply should be adjusted so as to maintain full employment at this stable level of wages, and the balance of payments should then be maintained by means of flexible exchange rates. The case is argued with all Mr. Hawtrey's usual skill and vigour and it makes a most stimulating little book.

E. VICTOR MORGAN.

Papers in English Monetary History. Edited by T. S. ASHTON and R. S. SAYERS. Oxford University Press. 1953. 167 pp. 18s.

This is a most useful collection of articles on banking and monetary history which are not easily accessible to students. The institutional workings of the English banking system in the first quarter of the nineteenth century are illustrated by Professor Ashton's essay on the use of bills of exchange as a common means of payment in Lancashire, and by the lively correspondence of Marianne Thornton on the fate of the bank of Pole, Thornton and Co. in the crisis of 1825. Two other articles are concerned with the developments of monetary theory in this period: Professor Fetter reassesses the Bullion Report and shows Ricardo's lack of influence upon it; Professor Sayers provides an interesting appraisal of Ricardo as a monetary theorist and indicates the longer-run influence of his thinking on the legislation of 1844. Mr. Horsefield's papers cover both institutional and theoretical developments. The problems of the regulation of credit creation are examined both in the emergence of practical rule-of-thumb guides for bankers and in the development from the late eighteenth century onwards of schools of monetary theorists whose variety is too often concealed under the titles of Banking and Currency Schools. He again dovetails institutional practices and contemporary theoretical explanations in analysing the background to the 1844 Act. Finally there is an important trio of papers covering the period from 1844 to 1914. Professor Whale writes provocatively on the Bank Charter Act, arguing that " it worked satisfactorily because it did not work in the way designed ". He also poses searching questions on the pre-1914 international working of the gold standard, and as against classical theory which the facts hardly fit, suggests an alternative mechanism starting with changes in home demand for money consequent upon variations in exports and tracing their effects through to variations in credit and finally to gold movements. Lastly Professor Sayers reveals the activities of the Bank of England in the gold market from 1890 to 1914, when this type of market operation was used as an alternative to Bank rate. Though not intended to be comprehensive, the papers chosen are uniformly of high quality and interest.

D. M. JOSLIN.

The Scottish Economy. A Statistical Account of Scottish Life. Edited by A. K. CAIRNCROSS. Cambridge University Press. 1954. xv + 320 pp. 30s.

This book consists of a series of statistically-based essays on various topics, ranging from population growth to church membership and finance. The discussion is conducted in terms of a twofold comparison, with earlier periods, and with the rest of Great Britain, and there is an excellent introduction by Professor Cairncross, in which the conclusions of the subsequent contributions are brought together to provide the essential outlines of the changing Scottish scene. Of particular interest to economists—and no doubt to Scottish Nationalists—are chapters on National Income by A. D. Campbell, and Production by C. E. V. Leser, in which it is shown that income per head in Scotland is lower than in England and Wales, and that " industrial productivity appears to be somewhat lower in Scotland than in the rest of the country ". The comparative indifference of Scottish industry to modern advances in technology is well known, but it is none the less useful to have figures which give some measure of its cost.

In spite of the extensive tables and capable interpretation—or perhaps because of them—the reader is left with a slight feeling of disappointment, as at an unfulfilled promise. The term " Scottish Economy " suggests an integrated analysis; but the book remains a collection of separate essays, only linked by a short introduction. Although warned that they represent more a statistical description of Scottish economic and social development than an analysis of current problems, one wishes that the contributors had not confined themselves so rigidly to the interpretation of statistics. The fundamental weakness of the purely statistical approach is most clearly to be seen in the treatment of fishing. This industry, which is not mentioned separately in the index, is treated throughout as part of the " etcetera " in the abbreviation of the category " Agriculture, Forestry and Fishing ". This may be justifiable in terms of the number of fishermen alone; it is not if one also takes account of the industrial ramifications of the fishing industry and its importance in Scottish life outside the central belt.

These reservations apart, *The Scottish Economy*, in bringing together and analysing a considerable amount of information available otherwise only from widely scattered sources, provides an invaluable statistical background for those concerned with special problems in Scotland. In so far as this is what its authors set out to do, it has succeeded admirably.

H. C. MACKENZIE.

An International Comparison of National Products and The Purchasing Power of Currencies: A Study of the United States, the United Kingdom, France, Germany and Italy. By MILTON GILBERT and IRVING B. KRAVIS. Organisation for European Economic Co-operation, Paris. H.M.S.O. 1954. 203 pp. Tables. Fr. 900. 18s.

International comparisons of the level of national product and of various components of the national product, such as investment or defence expenditures, in real terms are increasingly required in the day-to-day working of such international organisations as O.E.E.C. and N.A.T.O. Apart from the broad estimates of Mr. Colin Clark, satisfactory measures for making these comparisons were not available until the present study was undertaken. It might be said of these figures, as Keynes remarked of Clark's, that everyone will criticise their basis while being very glad to use them. There is much to admire also in the candour with which the limitations of their figures is recognised by the authors and the limitations of their methods for international comparisons is underlined. Any unevenness in exposition is more than compensated by this refusal to follow others in the calculation of wholly meaningless comparisons.

Hitherto international comparisons have been made either by expressing the components of the gross national product as percentages of the total or by deflating money national products by actual or adjusted exchange rates. The first method does not provide absolute comparisons while the second method, aside from the choice of deflator, suggests there is a unique answer to the question of the comparative income level of the two countries. In fact, there are two answers to the question of the relative internal purchasing power of the currencies being compared, depending on whether the price relationships between the two countries are weighted by the quantities of goods utilised in the one or the other country. In this study the authors have explored the possibility of estimating these two indices. Their aim was " to measure the relative economic ability of the five countries to meet the requirements of present-day existence " and so they have taken gross national product as the basis of comparison. The components are consequently given on a gross basis. Many will regret that some components, particularly perhaps investment, are not also given on a net basis but the authors found that " the available estimates of depreciation are so incomparable as to be virtually meaningless " in making international comparisons.

After a brief review of the conceptual problems of real product comparison the authors describe their method of determining prices and quantities. They selected roughly 250 " comparable " goods and allocated expenditure in each country to one or other of these goods which thus became " product classes ". This procedure inevitably involved a good deal of judgment. In the case of quality differences and unique products the authors have shown much ingenuity in calculating prices and quantities. Thus for telephone facilities the unit of product was taken to be monthly telephone service consisting of 50 local calls and 4 toll calls of a specified distance while for cars a kilo of automobile became the unit of quantity. These calculations and adjustments resulted in two sets of quantity data, one based on United States price weights and the other based on the weights of the particular European country involved in each comparison.

In order to determine the relative positions of all the countries together it was necessary to calculate average European price weights. It is here that the authors make their most original contribution. First, all expenditures had to be reassigned to those product classes that were common to all four European countries. This mainly affected consumption goods and somewhat reduced the number of classes. In adjusting for quality differences the American quality was taken as base. Once they had obtained a common set of goods with quantities and prices for all five countries each European country's price was converted into dollars by using as conversion rates the purchasing power equivalents on a factor cost basis computed from the direct comparison between the country concerned and the United States. A weighted average of the prices in the four European countries for each product class was obtained and applied to the quantities in each of the five countries to yield a set of real values for all product classes.

The real internal purchasing power of European currencies for all kinds of expenditure is shown to be much more favourable than their exchange rate equivalents. Thus, in 1950, the real quantum of defence of the European countries was roughly twice as large on the basis of United States prices as on the basis of the exchange rate equivalent of national currencies. Furthermore, the purchasing power equivalent of one dollar varies sharply according to the item purchased. Taking United Kingdom weights, the equivalent of one dollar varies between 2/- when spent on personnel in government administration and 16/3 when spent on tobacco at market prices, or, at factor prices, between 2/7 when spent on housing and 9/1 when spent on the purchase of transportation equipment.

D. J. MORGAN.

Studies in Costing. Edited by DAVID SOLOMONS, on behalf of the Association of University Teachers of Accounting. Sweet & Maxwell Ltd. 1952. xii + 643 pp. 35s.

This book is a companion volume to *Studies in Accounting*, which appeared in 1950. It is a collection of twenty-six papers, one of which is a special contribution by the Editor and which deals with the historical evolution of costing. All the rest are reprints of articles on the history, theory and practice of cost accounting, twelve being British, an equal number American, and one emanating from Holland.

The whole is divided into five sections. These, in order, are: Historical, Concepts of Cost and Costing, Costing as an Instrument of Planning and Pricing, Costing as an Instrument of Control, and Costing in the Service of Government. Of necessity, there is a certain arbitrariness in the classification of contributions under the various headings, but that is unavoidable.

We propose to set about our inspection of the edifice put together by Mr. Solomons by starting with the basement, which is History; proceeding to the ground floor, which comprises the Rationale of the subject matter; thence to the first floor, to the Dynamics of it; and finally, and almost incidentally, to the upper storeys, where are located the more technical departments of Control and Government Costing.

The first section is chiefly notable for the editor's admirable account of the historical development of costing, starting with the early fourteenth century, in Italy, when, according to Mrs. de Roover, accounting was first used in industry. However disconcerting it may be to professional accountants, the conclusion that " there is remarkably little in modern costing which our fathers did not know about ", is nevertheless a perfectly sound and reasonable one. As long ago as 1838 Cournot asserted that " the producer will always stop (expanding his output) when the increase in expense exceeds the increase in receipts "; or, as we should say today, when marginal cost (increasing or constant) equals marginal revenue (constant or decreasing). Towards the close of the century the Austrian, Wilhelm von Nördling, reasoned that what mattered (in assessing the cost of rail transportation) was not average cost, but only " the increment in expenditure necessary to transport one ton-kilometre *more* . . .". Neither the " marginal cost analysis " nor the notion of " opportunity cost " (which von Nördling understood so well) is an invention of the present day; or of the present generation, for that matter.

That, however, in no way detracts from the pioneering quality and authority of Professor R. S. Edwards's article, " The Rationale of Cost Accounting ", which forms the essential part of the second section. If *Studies in Costing* did no more than contain a reprint of this rare contribution it would justify its existence ! Edwards may not have fashioned the " marginalist's " tools, but it was he who in simple language riveted the attention of economists, accountants and businessmen alike upon the relevance and the value, for business management, of thinking in terms of marginal rather than of average costs. " The most important thing about costs," he says, " is the extent to which they vary with output. . . . I consider it the cost accountant's main job to inform the management regarding the minimum at which additional work can be taken on." The logic is irrefutable. If the truth be known, it was probably Edwards, as much as anyone else, who touched off the sustained " marginal cost controversy " which, in Britain, in America, and elsewhere has become one of the great unsettled questions, not only of accounting, but of business administration and economics.

In 1938, R. H. Coase followed up Edwards's lead with a series of twelve articles in *The Accountant* on " Business Organisation and the Accountant ", all of which are reproduced here. Coase enlivened a constructive critique of orthodox cost accounting practices by a stimulating discussion of the rôle of marginal costs in deciding the age-old problem whether to make or buy.

The category embracing costing as an instrument of planning and pricing is as authoritative as the preceding, and its composition reveals the same discernment on the part of the editor.

R. A. Gordon's " Short-period Price Determination in Theory and Practice," distinguished as much for its erudition as for its challenging tone, heads the list. But, somewhat surprisingly, Machlup's " Marginal Analysis and Empirical Research " finds no place. Mr. Solomons has done well to include that very precise yet practical treatment, " Accounting Measurements of Incremental Cost," by the American, William J. Vatter. Although the notion of marginal cost (" a rate-of-change notion ") is extremely difficult to apply in practice, " a combination of statistical methods with accounting procedures, and a compromise of definition that will meet the exigencies of measurement, can make real progress toward . . . the proper use of incremental costs ".

The reference to statistical methods is timely. A fair measure of success appears to have been achieved in measuring marginal costs and in establishing cost-output relationships by statistical procedures. Possibly the one criticism of any substance that might be directed at the volume under review is its failure to make provision for a logically complete account of the statistical determination of costs. (There are, admittedly, references to the problem in Joel Dean's and in Coase's articles.)

A feature of the section entitled Costing as an Instrument of Control is the inclusion in it of three costing " case studies ". Sir Charles Renold's description of his company's budgeting and control accounting practices reveals an enlightened application of the conventional accounting procedures to managerial problems, but no more. The system suffers from its considerable reliance upon what appears to be a routine, rule-of-thumb allocation of overhead costs. C. J. Peters's case study of production and cost control confirms the reviewer in his opinion that the orthodox costing methods are tolerably well suited to the *technical* function of checking or preventing waste and inefficiency in the production processes.

Four papers on various aspects of costing in the service of government complete the volume. Interesting as they are, they do not quite measure up to the analytical quality of an article such as Gabriel Dessus's " The General Principles of Rate-fixing in Public Utilities ", which first appeared in English in 1951 in *International Economic Papers*.

Be that as it may, *Studies in Costing* is an addition of the first importance to the literature on management and cost accounting. Commenting a few years ago on the complexity of " this subject of costs ", Mr. C. Reinold Noyes stated that his object was " to call attention to the arduous job of clearing, draining, ploughing, harrowing and sowing that must be done before it is going to be possible to bring out the reaper ". Mr. Solomons has contributed in no small measure towards the achievement of that goal.

O. P. F. HORWOOD.

Wirtschaftstheorie und Wirtschaftspolitik. Festschrift für Alfred Amonn zum 70. Geburtstag. Edited by V. F. WAGNER and F. MARBACH. Francke, Bern. 1953. 371 pp. S. Fr. 47.

Professor Amonn, an economist of the Austrian school, who spent the greater part of his life in Switzerland, is honoured on the occasion of his 70th birthday by a volume of nineteen essays contributed by colleagues and friends. Von Zwiedineck-Südenhorst, who is Amonn's elder by nearly twenty years, traces the rapid growth of the Austrian school in economics, based on Menger's path-breaking work on marginal utility, at a time when " Austria " had little meaning in the consciousness of the multi-national societies which composed that State. He recalls the conflict between that school and the German historical school and then focuses attention on the foundations of the Austrian approach with a discourse on the limits and relativity of subjectivism in economic theory. Hans Meyer, the recognised doyen of that school, reverts in his essay to the old problem in fundamental economics of the measurability of subjective value. He reminds us that, despite Böhm-Bawerk's deviationism, Menger himself never assented to the cardinal measurability of utility. This, however, provides no justification for going to the other extreme and to say with Hicks that, in advocating the indifference technique, " the first victim must evidently be marginal utility itself ". Meyer suggests that the stark dilemma faced by those who desire to retain subjective valuation and yet admit the non-measurability of cardinal utility can be solved by taking into account time; a solution which he promises to develop further in a later study. Still pursuing fundamentals, Oskar Morgenstern asks " When is a problem of economic policy solvable ? " He suggests, granted the feasibility of a theoretical solution, that society may impose so many restrictions upon the " means to be used that even those problems for which all solutions are known become unsolvable ". Referring to contradictions between economic theories, Eugen Böhler looks for explanation to " psychological mechanisms " which prevent reasoning from proceeding according to logical norms.

In a fine contribution Fritz Marbach contends that theoretical market models may illuminate the determination of prices, but are inappropriate for the framing, for instance, of monopoly legislation. Alfred Walther pleads that public policy ought to be based more firmly than it is on the study of the firm and its organisation, and H. Reinhard Meyer, in order to assess the comparative efficiency of different transport agencies in Switzerland, argues the case for a sound rate structure. A sociological-economic study of Swiss handicraft trades in the 17th and 18th centuries is provided by Emil J. Walter.

Within the spheres of monetary, fiscal and commercial theory and policy, V. F. Wagner gives a clear account of the controversies over the quantity theory of money and its Keynesian refinement for the explanation of price movements. In a well balanced exposition of Keynes' theory of income determination, H. G. Bieri reminds us that, in applying that theory, care must be taken to examine in each case the specific conditions which shape the various Keynesian functions. In an admirably concise essay Gottfried Haberler comments upon the present state of trade cycle analysis, and Hans Böhi deals with different cyclical mechanisms of econometric models, supplementing the simple multiplier-accelerator interaction by taking into account production periods in the different sectors of the economy. It is left to W. A. Jöhr to stress the connection between sociology and economics, especially in economic process analysis.

These essays vary in scope, analytical rigour, and in style of presentation. But this very variety reflects on a broad map the many contours of the subject. Those who wish to pursue specific paths will find among the abundant notes to each essay some relevant pointers.

H. C. HILLMANN.

Theory of Economic Dynamics: An Essay on Cyclical and Long-Run Changes in Capitalist Economy. By M. KALECKI. George Allen & Unwin Ltd. 1954. 178 pp. 12s. 6d., 18s. cloth.

This book consists of revised versions of Mr. Kalecki's earlier works, *Essays in the Theory of Economic Fluctuations* and *Studies in Economic Dynamics*, which have been out of print for some time. The original papers have been rewritten and rearranged to lead up to a theory of cyclical fluctuations. Mr. Kalecki first discusses the degree of monopoly and then postulates a number of relationships between income, profits, consumption and investment. Following the introduction of each relationship there is a regression analysis of relevant statistical data; but Mr. Kalecki emphasises that the statistical analysis is intended to show the plausibility of the relation postulated rather than to obtain the most likely value of the coefficients. The separate relationships are later combined in a dynamic model which exhibits cyclical fluctuations. Mr. Kalecki favours the Frisch theory of damped cycles continually excited by erratic shocks rather than the Hicks-Goodwin theory of limit cycles in a non-linear system, and has constructed some series to show that if the magnitudes of the shocks are normally distributed fairly regular cycles are generated even when the system is rather heavily damped. In the concluding chapters of the book a growth trend is added to the cyclical model and there is a brief and very formal treatment of the factors affecting long-run development.

Mr. Kalecki does not claim that he has given anything approaching a complete explanation of cyclical changes, and one can of course devise many other systems equally consistent with the data and leading to similar fluctuations. Opinions will differ as to the explanatory value of this particular system. The arguments given to support the assumption that investment decisions depend on the rates of change of profits and of the capital stock rather than on their levels seem rather weak. Interest rates are discussed but are considered to be of little or no importance, while no causal significance is attached to price movements. But whatever the limitations, Mr. Kalecki's contributions have been of the greatest importance in the development of dynamic theories and methods of analysis and this new presentation of his ideas will repay careful study.

A. W. PHILLIPS.

Economic Survey of Europe in 1953. UNITED NATIONS. Geneva. 1954. xii + 314 pp. 17s. 6d.

The Economic Commission for Europe's Annual Survey this year is divided into three parts: the first part deals with Western Europe, the second with Eastern Europe and the Soviet Union, and the third with Southern Europe. The last-mentioned gives more detailed information than has hitherto been provided on the five southern countries—Turkey, Greece, Yugoslavia, Spain and Portugal, and by the rather novel device of treating Southern Italy on its own, the group is made to include all the poorer European countries outside the Iron Curtain. The chapters dealing with Southern Europe would provide a useful introduction for anyone unacquainted with those parts who wishes to learn about their economic structures and prospects. Of particular interest is the chapter on Yugoslavia (Chapter VIII), both because of the substantial redirection in government policy away from centralisation in ownership and administration since 1948, and also because of the increase in the amount of information regarding her economy available in the West following her emergence from behind the Iron Curtain in that year. Each of the countries discussed has its individual peculiarities—for instance, the curious position of Portugal, which is the only member of the group to combine a strong foreign exchange position with a very low degree of economic development. But for all of these Southern European countries it may be said that the problem of increasing investment and the problem of raising productivity in agriculture are matters of paramount importance. These conclusions, which stand out clearly in the Report, are none the less valid for being familiar.

The chapter (III) on the Soviet Union is brief, but contains at least some real statistics in addition to the usual index numbers. Even the short sketches of the European countries east of the Iron Curtain given in Chapter IV, and presented side by side with the surveys of the Southern European countries, may serve as a useful stimulus to further thought on the necessity for economic action, national and international, with respect to the poorer members of the Western alliance.

The chapters (I and II) dealing with Western Europe have of necessity been made shorter than usual. Particular attention is given to the problem of actual and prospective demand for output. The thesis is advanced that variations in national outputs are primarily to be explained by the changing course of exports and " the economically arbitrary development of Government consumption " (p. 43) and not by conscious fiscal or monetary policies of governments.

H. MAKOWER.

The Determinants and Consequences of Population Trends. A Summary of the Findings of Studies on the Relationships between Population Changes and Economic and Social Conditions. UNITED NATIONS. New York. 1954. xii + 404 pp. 30s.

This is the most comprehensive and ambitious publication which has so far been issued by the Population Division of the United Nations. It aims to gather together and to summarise the most important results on the major problems connected with population. This is a task which is especially suitable for an international secretariat containing members of many different nationalities who will be more familiar with the literature in different languages than any individual scholar can ever hope to be.

The study is divided into three parts. In the first an outline of world population history is followed by a summary account of the history of population theories. This section contains an interesting but all too brief account of recent Russian writings on the population problem. Most of these writers are anti-Malthusian and anti-restrictionist. They claim that the problem of population pressure is non-existent under Socialism. It will be interesting to see whether the adherence of China—whose demographic situation is very different from that of Russia—to the Communist sphere of influence will lead to a change of outlook in that sphere.

The second part deals with the factors affecting population trends. Mortality, fertility, migration and the main factors affecting them are discussed separately. It is surprising that there is not a chapter on marriage trends in view of the greater interest that demographers have shown in this subject, though certain aspects of nuptiality are naturally discussed in the section dealing with fertility. Apart from this omission the material is well presented and discussed. Throughout, countries with low fertility and mortality are treated separately from areas in an earlier stage of demographic evolution. A chapter is devoted to future population prospects and one to the geographical distribution of populations. The only criticism that may be made against this section is that in their desire to be complete and encyclopædic the Division have included accounts of some studies which are of very limited value.

The third and final section deals with the economic and social effects of population changes, with the emphasis on the former aspect. Again the coverage appears to be pretty complete, but the dearth of good empirical work on the effects of population changes becomes fairly obvious. It is strange that this subject should have been so neglected by economists. Techniques of measurement are, of course, more difficult but the contrast between the demographic findings in the second part and those in the third part is very striking. The latter are almost entirely discussions of theories without adequate data. Clearly there remains a good deal of scope for research in this field.

The conclusions are cautious, tentative and non-dogmatic, as befits a book which has been drafted by international civil servants. But it should be made clear that this is by far the best and clearest account of population problems that is at present on the market, and that it can be recommended without reservation.

E. GREBENIK.

The Typographical Association: Origins and History up to 1949. By A. E. MUSSON. Oxford University Press. (Geoffrey Cumberlege.) 1954. ix + 550 pp. 30s.

During recent years there have been numerous publications to celebrate the centenaries of industrial and business firms, trade unions and other bodies. This official centenary record of the Typographical Association differs from most of them in being an unbiassed account by an economic historian. Mr. Musson, who is a member of the Economic History Department of the University of Manchester, was given full access to the Association's minute-books, conference reports, wage-scales and other official documents. He has also made extensive use of the *Typographical Circular* and other relevant publications. From these he has gleaned a mass of information on the development of trade unionism in the provincial letterpress printing industry. The result is an impressive volume several times the size of the *Fifty Years' Record* which had carried the society's history to 1899.

In his anxiety to include all the data which he had collected the author was faced with a problem of arrangement. A straightforward chronological history would, he felt, be confusing. He has accordingly divided the book into three sections. The first deals with trade unionism in the provincial printing industry before 1849, describing the early craft traditions, the influence of the Stationers' Company from its incorporation in 1557, and the general background of trade unionism. The second part treats of the Typographical Association itself from 1849 to 1914; it discusses in separate chapters, each of them concerned with the whole of this period, such matters as relations with employers, strike policy, wages, hours and working regulations, apprenticeship, relations with other unions, and friendly benefits. A similar arrangement has been adopted for part three, which carries the history to 1949. To end the volume there are tables showing, for each year, the number of members (rising from 481 in 1849 to over 46,000 in 1949), the amounts of strike payments, unemployment payments, superannuation payments, and so on. The whole book describes, in fullest detail, the trials and achievements of the Association during a hundred years. Members will be proud to possess it.

The many other readers who are interested in trade union history may, unfortunately, find the book a little dull. They are not so concerned with minute changes in wage-scales or rules for apprenticeship as with general trends, and these the narrative tends to obscure. One would welcome on their behalf a shorter version of the book, related more closely to the general economic history of the period, and in particular to the development of the book and newspaper trades. In addition, a quotation here and there from the spirited correspondence in which nineteenth century printers were wont to indulge would give a welcome human touch which is sadly lacking from this official record.

MARJORIE PLANT.

SHORTER NOTICES

Die Nachfrage nach Nahrungsmitteln und ihre Abhängigkeit von Preis- und Einkommensänderungen. By H. GOLLNICK. Paul Parey, Berlin. 1954. 110 pp.

It is claimed in the preface to this study of the demand for foodstuffs that the main purpose is a description and discussion of econometric methods in order to make recent foreign contributions more accessible to the German reader. Despite extensive references (and a hotchpotch bibliography) the study is not entirely successful in this attempt since the only method used is that of least squares, the logic and limitations of which are only inadequately discussed. The numerical results, however, may be of interest to the economist concerned with food and agriculture. Demand functions are of the constant elasticity type yielding income elasticities and direct and cross price elasticities for six food groups, viz.: eggs, cheese, meat, butter, margarine and lard, and fish. These elasticities are given for five different social groups (two groups of wage earners and three of salaried employees). The sample was taken from Hamburg and covers the period August 1949 to July 1950. There is insufficient discussion of the data; one would have liked more detail about the grouping of commodities and the averaging of prices and quantities. The shortness of the sampling period with the attendant seasonal effects and serial correlation is a further handicap. Nevertheless, this study is a useful essay in the field of quantitative economics.

The Problem of Summation in Economic Science. By G. NYBLEN. C. W. K. Gleerup, Lund. 1951. xii + 289 pp.

This published form of a doctor's thesis touches on a large number of topics and summarises a great deal of economic theory concisely and with understanding. There are chapters on econometric equation systems, on production and distribution, on the rate of interest, on inflation, on business cycles, etc. An interesting attempt is made at employing concepts derived from the theory of games in dealing with dynamic phenomena; while one welcomes applications of this theory (which may turn out very illuminating) the present results are somewhat disappointing. *In summa*, the book stimulates one's interest without wholly satisfying it.

Berufsausbildung und Produktivität. Westdeutsche Nachwuchsprobleme im Zusammenhang in- und ausländischer Entwicklungen. By HILDE WANDER. Kieler Studien. Forschungsberichte des Instituts für Weltwirtschaft. No. 26. Kiel. 1953. vi + 157 pp. Dm. 10.

Dr. Wander argues that the future burden of maintaining an increasing proportion of old people in the population can best be borne by raising the productivity of the active working population. Improved equipment per worker helps. However, the very advance in technique is accompanied by an ever increasing demand for skilled labour. To meet it, vocational training must be intensified. On the basis of a systematic comparison of occupational training methods in Western Germany, Western Europe and the United States, Dr. Wander recommends changes in training arrangements for Germans, designed to make them more easily adaptable to changing demands upon skill.

Three Centuries of Sheffield Steel. By S. POLLARD. Marsh Bros. & Co. Ltd., Sheffield. 1954. 83 pp.

This useful little book traces the story of a family firm, Marsh Bros. & Co. Ltd., from 1631 to the present day. For the economic historian the meat of the book consists of three chapters covering the years 1780—1868. During this period the business expanded, becoming one of the foremost firms of Sheffield steel and cutlery manufacturers and exporters. It was much concerned with the American market and Dr. Pollard's account of its experiences there is particularly interesting. Thereafter Marsh Bros. did not, as Dr. Pollard puts it, " plunge into the uncharted sea of bulk steel ", continuing instead as merchants and small-scale producers of special steels. Not until 1953 did the firm abandon the crucible for the electric furnace, having made crucible steel for 125 years.

INSTITUT FÜR WELTWIRTSCHAFT AN DER UNIVERSITÄT KIEL. *Die Weltwirtschaft.* 1954 : Heft 1. liv + 181 pp. Dm. 10.

This survey of world economic affairs is published twice a year by the University of Kiel. It contains a general review of recent trends, followed by special reports and articles. There are 34 reports on various countries (special attention being paid to Africa in this issue), 13 on commodity markets, and 5 on major industries. The two articles deal with Germany's Export Surplus and the U.S. Budget, respectively. Most of the tables in the extensive Statistical Appendix are brought up to March 1954. This journal is a valuable digest of a wide range of information, is well set out, and uses clear and concise tables and diagrams.

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